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THE

DUBLIN JOURNAL

OF

MEDICAL SCIENCE;

EXHIBITING

A COMPREHENSIVE VIEW

OF THE

LATEST DISCOVERIES

IN

MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.

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The Reviews of "Fournet on Auscultation," and "Brodie on the Joints," are unavoidably postponed till next Number."

THE

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Remarks on the Uses of the Globules, in relation to Absorption, Secretion, and Morbid Deposition; but especially for the Diagnosis of Tubercles of the Lungs and elsewhere.* By THOMAS HODGSON WATTS, M.D.

[Continued from Vol. XX. p. 42.]

OUR previous essays were not intended originally for the press, and having been published while we were yet busy in these researches, we will review the whole subject in this place.

To dilate somewhat on the secretion of tubercle, will afford us an opportunity of explaining more clearly our views on this function of the animal economy in general. How much soever the evacuation of a morbid matter from the vascular system, may differ from healthy secretion, still analogous powers operate largely in both. Also in following the course thus marked out for ourselves, we will not only explain the process of morbid deposition by the more familiar one of physiological secretion; but we will besides show in what they are distinct,

and how the formation of tubercle may be otherwise accomplished.

Tubercular secretion, when simple, and not combined with complicated diseased action, is accomplished by a series of means, altogether analogous to those producing the secreted matters of the healthy body. It is however, a temporary and accidental product of the vital laboratory, and scarcely possesses in all completeness the mechanism of the healthy process; but once having obtained a clear understanding of the secretory process in health, we will readily trace its relationship to a similar act in disease, which evacuates from the vascular apparatus, the product of disordered vitality.

Such a modification of vitality follows in the part where tubercle is about to be eliminated from the circulating fluids, when the capillaries set about forming tubercular matter instead of their usual and normal products. If we inquire, however, into the nature of this power of tuberculization, we will learn almost nothing positive; but by comparing the properties of the morbid matter with other products of disease, or even with some normal constituents of the healthy frame, we shall find many striking features common to it, and some organic substances more familiar to us. Perhaps it is not wrong to suppose, that any similarity of physical appearance and chemical reaction of the matters of secretion, indicates in equal measure some analogy in the forces forming them.

The tenacious semi-fluid of the grey granulation in the early stage, is not unlike coagulable lymph. It is blanched by distilled water, and answers to most of the tests of fibrine. Tubercle also, when viewed by the microscope, as well in the state of plastic fluid, as in the form of gum-like globules, bears some resemblance to albumen; in the former case, being more like raw white of egg, but resembling coagulated albumen in the latter. Such points of analogy between albumen, fibrine, and tubercle, although sufficing to convey to us a better idea of its essential nature, and to justify us in suspecting it to be a re-

sult of a farther change of vitality, than is required for the secretion of lymph, by no means establish their identity. Tuberculization may, perhaps, be merely a modification of the plastic process, and tubercle a second variety of plastic matter; but it has characters singular enough to distinguish it easily from organizable lymph and other things. The history of isomeric bodies offers many examples of the same chemical elements producing different crystals, whose properties are equally diverse. There obtain in those instances, determinate measures, as well of composition as of form; and this law of proportions appears to apply in a great degree, also to the compounds of diseased vitality.

The first solid compound of vital affinity beyond the boundary of health, is coagulable lymph, which follows in straight succession on the effusion of serosity; and in ordinary circumstances pus is the second. It is between the one and other of the two, that tubercle seems deservedly to occupy a place. The morbid preparation is, to appearance, nearly the same for all of them; and the secretion of each respectively may go on simply from the mass yet in circulation, or be attended with ultimate congestion of blood of a permanent kind. But beyond this they differ widely. The globule of pus is an orbicular membrane, full of a more fluid matter; organizable lymph puts on the cellular and fibrous arrangement; and tubercle, with all its points of resemblance to the former in the early periods, and to coagulated albumen, and particles of fibrine in the later periods, gradually changes from a fluid to a solid friable mass, only to soften again with the solution of the texture it occupies, resolving into globular bodies of considerable consistence, and sufficiently characteristic. When secreted, so like the product of plasticity, and fully formed, resembling much that of suppuration—it yet attains to neither. It goes progressively through the course of generating, maturing, and softening tubercle; the ultimate symptom of scrofula,

The relationship of tubercle to its cachexia is most interesting. It appears evident, that a particular habit of body is a necessary condition for its formation, whether hereditary, congenital, or acquired. It is also notorious that every cachexia disposes to various disease and inflammation, and syphilis and scrofula in an especial manner to morbid alterations of the vitality in minuter points. The punctiform change is similar in no small degree in both cases; in as far as the pathological features of a series of intimate alterations in such localities are analogous; and in some instances the product of them is nearly alike, wasting the tissues *in situ*, or even destroying them altogether by the softening and evacuation of an inorganizable matter.

The character of the vitality with which men are endowed, seems various; and in hereditary and congenital scrofula, it may give birth to the tubercular cachexia, so methodically at times, as if it were attached to the phenomena of being, a part of the individual gift of existence. It arises also in the familiar way of aberration of health in the common accidents of life; but with the peculiarity of descending afterwards from parent to child, until a sounder constitution may be once more established in some future generation. Many particularities of the fathers descend upon the children; and so also it is with tubercular disease; and we may derive the hereditary form of it in this way, without supposing it necessarily, and unavoidably affianced on humanity. This alteration of the life of the individual once accomplished, the cachexia mostly overrules the morbid working of the animal economy.

Perhaps, we might be justified in supposing many a variety in the nature of the cachexia, if we regard the striking peculiarities of cases essentially the same. But we have no positive means of appreciating how far this is really the fact, nor even how the ill habit of body decides in a particular manner the local expression of the malady; and we are left to presume on

the special forms of the tubercular deposition, that they indicate some truth in such a suspicion. Thus not only is syphilis more common to the skin, and scrofula to internal parts; but likewise tubercle is remarkably partial in its choice of site and manner of attack. It may fix upon a part of the lymphatic system, or the lungs and mucous membranes, or the serous cavities and the joints; nor are the usual seats of venereal disease exempt from it. Again, it may appear in the forms of small granulations, little knots, and uniform infiltration of the substance of an organ, or similarly as secretion from a membrane. But all we can argue from this groundwork is, that many of these features of the malady are derived from some inborn peculiarity of the life of the sufferer, as also from other accidents of disease.

We have met with a very striking example of uniformly secreted tubercle, whose origin was derived beyond a question from the casual circumstance of pericarditis occurring in a highly tubercular constitution. At the autoposy of a soldier, who had suffered much during the slow course of phthisis, made by our friend, assistant staff surgeon, Mr. George Galland, in the hospital of Chatham barracks; a mass of tubercle was found, which covered the surface of the heart with a layer as thick as the little finger. It had a uniform appearance, like common moist and tough cheese. It was somewhat yellow, but tolerably consistent, not having attained the period of softening. It had probably formed by the process of plasticity; and the plastic embryo of tubercle had been eliminated, where organizable lymph would otherwise have been secreted in one of sounder habit of body.

The rare occurrence of tubercle in this site, will insure the correctness of our view, as to its origin by the chance of intervening disease, and we introduce it in this place, to qualify our conviction already expressed, that it is not improbable there may be peculiar varieties of the tubercular cachexia. Although

it is a good example of the power of accidents in the localization of tubercle, still we feel guarded in the expression of an opinion, in saying there are besides many excentric features of the malady, belonging in no wise to the chapter of accidents. But we should here also inquire farther, may these peculiarities of tuberculization depend rather on the inborn vitality of the locality special to the individual, than on a variety of the cachexia?

We have already described some of the appearances seen in tubercle by the microscope in a preceding essay, and we will now add whatever details a greater familiarity with it enables us to do. In the maturer form of yellow matter, it presents the most satisfactory appearances. When compressed between the object glasses with a drop of water, it bruises with more or less facility, assuming a milky look, and a part of it composed of globular fragments mixes with the fluid. The entire mass appears granular in the microscope, and of a light sienna colour. The borders are irregular, jagged, and broken, and many projecting fragments, about to separate themselves, are apparently attached to it by softer and more elastic matter, resembling in some measure a connecting tissue. This is not unlike what we have seen uniting the particles of fibrinous substance, which joins the fibres of muscle previously boiled. At an earlier stage, this softer material of union is less remarkable, because of the greater homogeneity of the morbid matter. When, however, it approaches towards softening, the connecting tissue grows more elastic and apparent, but to disappear ultimately in leaving innumerable globular bodies.

These are the gum-like globules described by us in a preceding essay, and they resemble broken portions of a friable mass. They have some features in common with broken morsels of fibrine well cooked. The chemical reactions also are almost alike. They vary in volume from minute particles to morsels as large as, and larger than the globules of pus. Fre-

quently two, three, four, or more of them, closely united, mix with the rest. They are all transparent; some of them have a uniform or smooth surface, others have a rougher broken appearance, and a good many present black points not unlike those of the globules of pus.

Such are the appearances of the globular fragments in maturer tubercle, viewed by a microscope magnifying five hundred fold, and which we have compared in a former essay to tears of gum. We have no longer a doubt concerning their solidity; they are solid concretions of an animal matter, having much analogy to fibrine, and more remotely to albumen. This similarity is so remarkable, that were fragments of fibrine and tubercle mingled together in equal proportions, it would be perhaps impossible to distinguish positively one from another of them.

The tests of the chemical laboratory are nearly as unsatisfactory, and perhaps the only difference in the two cases lies in tubercle offering more comparative resistance to some tests.

The true difference is an inborn peculiarity of vital composition, whereby tubercle is not otherwise organizable, but only concretes into the form we have described. The normal fibrine of the healthy body, and of coagulable lymph, bears in it a vital property of organization, into fibre, tissue, and vessel. But the globular bodies of tubercle go on progressively completing themselves, even at the cost of neighbouring organic textures, which ultimately soften and dissolve.

The gradual transition of tubercular secretion into concreted tubercle, and finally into yellow matter, and the globular mass of softening, is highly interesting to the speculative inquirer into disease. It seems that tubercle when formed by secretion, must pass through a progressive alteration of aspect; and this is perhaps effected by a gradual change of its integral composition. This change follows in all probability in obedience to laws similar to those of catalysis familiar to the chemist.

However, it is scarcely possible to prove positively the transition of tubercular secretion into yellow matter, and mature tubercle; but a strong case of reason can be made out in support of it. We see tubercle in every variety of condition from newly eliminated secretion, to grey, white, yellow, and soft matter; and it is not too much to believe, that it may go through these forms in gradual progression, to what is clearly its terminal state. It is, beyond a doubt, yellow tubercle is not formed at once, but requires, an interval of some time for entire development. This period is of variable duration, but probably always longer, the more purely has been its origin in secretion. The alteration of appearance must be considerable and manifold in the maturation of tubercle; and as the simple way of estimating them, we should regard the many varieties of tubercular matter, as representing faithfully the successive steps of this interesting change.

To seek a satisfactory explanation of the transition of tubercular secretion into the yellow globular mass, would be a vain endeavour; but we may make curious observations enough, which render it familiar and comprehensible. If we steep a grey granulation of comparatively recent formation in distilled water, its transparency is lost to appearance, and, becoming blanched, it resembles outwardly one of older date, or greyish-white tubercle. The ultimate composition, however, is not altered in equal measure. Again, a portion of firm tubercle kept during hot weather in water occasionally renewed, softens and approaches nearer to the quality of yellow matter. It is compressed more readily by the object glasses, and separates into globular fragments, like those of softening matters in cavities. They are not, however, wholly identical, being analagous, but not perfect in the entire of their characters. Modifications such as these, of which tubercle is susceptible in so short an interval by management of its physical relations, leave us to comprehend those others of tubercular transition which

are only perfected after some time in a laboratory, such as the diseased organ of the living body. It is, however, impossible to accomplish the several steps of tubercular transition by any composition of physical means, in so far as our experience goes.

Besides the mass of globular bodies, we find, likewise, fibres of a particular sort in tuberculized lungs. They are mostly arranged at angles to one another, and for the most part united in bundles of about half a dozen threads. We have observed very similar appearances in healthy lung, in taking into account the very great difference in the two cases. They are lax, huddled and compacted together in the sound parenchyma, and the threads are close and somewhat indistinct; but in the diseased state the mesh of tissues being full of tubercle, they are separated and spread apart by the morbid matter. The thin threads composing the bundles of fibres are also in a state of pathological preparation, and far from adhering with equal closeness. In the tubercular mass they form triangular spaces with rounded corners, which are owing to the junction of the fine threads on three points. (See *Plate* 2.)

Although we see them in the grey granulation and firm infiltrated tubercle, as well as in the mature state of softening, still they are seen to most advantage towards the latter stages of the morbid matter. The softer mass separates more easily from them by compression, leaving them nicely and cleanly detached; whilst in the more consistent state they are liable to break into fragments together with the friable mass, the concretions being compacted so intimately one to another, and to them. Also, when the grey granulation is yet elastic and somewhat transparent, the fibres are less apt to be crushed, and are seen advantageously.

The softening of tubercle is in a great measure simultaneous with the solution of the textures wherein it has been deposited, and of course also to no small degree of the fibres already described. This solution explains in part our finding a great

proportion of matured tubercle wanting them entirely. But reasons enough besides account satisfactorily for their occasional absence or presence in greater or less plenty.

Tubercle of an air tube,—we would not expect to offer any appearance of them. When the morbid matter has been deposited most abundantly in the mesh of parenchyma, it will exceed the interlacing fibres so much that we may examine many specimens in the small field of a microscope without meeting with any. If, on the contrary, a cavity has quickly broken open, and the globules escape early from the mesh of lung, we may properly expect to find the proportion of fibres greater in its velvet-looking surface, covered with shreds of the wasted organ. Also, sometimes the presence of organized lymph may, perhaps, give an appearance of additional fibres.

Doubtless, these fibres perform an important part in respiration, and may be the resiliency of the lungs depends essentially on them. But not to speculate farther on their uses in health, we will remark on their disordered function possibly in disease, which is the true point of interest to the physician. The questions occur to us, can spasm of them produce asthma? and may the interrupted respiration of commencing phthisis lie in some irregular and irritable contraction of them? and may the extreme irritability of the intercostal muscles in this malady proceed from a common cause with that of these fibres of the lung? These are new sources for inquiry of high moment to any one who would prosecute thoroughly profound pathology, and they promise a very satisfactory conclusion.

The fibres in the parenchyma of healthy lung are, as it were, firmly compacted into bundles by a glutinous substance concreted around them. They are similar to what five or six threads of fine cotton, steeped in melted Indian rubber, and allowed to cool, would look like. This cloaks their separate threads, and gives them the appearance of interlacing shreds of a fibrinous matter. (See *Plate 2, fig.* 3.) They are somewhat of the colour and transparency of amber, but, of course this

colour is accidental, as it is on the whole in microscopic objects. It is only by comparing one thing with another here that we can judge of it rightly.

It is not muscle alone which has the power of contractile motion, but the sensitive plant, many flowers, and some parts of animal bodies, that are something more or less than muscle, are likewise endowed with it. Is it then no less probable that the pulmonary fibres have also the faculty of contraction alternating with relaxation? There is no decided reason wherefore they ought not to possess it; besides, they resemble very much the contractile fibres of the scrotum and the skin of the hog, being, however, very much finer. This being allowed, would it not seem a rational and probable way to account for some, at least, of the phenomena of spasmodic asthma, by supposing them to be in the state of spasm during the paroxysms?

Again, in the respiration *entre coupée*, may it not act a principal part? No satisfactory reason has hitherto been given for this singular feature of disease, so common to the early periods of tuberculization of the lungs. Is it not, however, most probable that it depends directly on inconstant spasm of the fibres of lung, confined more or less to the part affected by tubercular change, which would appear irritable in a high degree?

Elsewhere we have sought to prove that tubercle forms by secretion, and also not seldom by direct conversion of blood permanently coagulated in the vessel. Secreted tubercle is, however, its general form, while the transition from coagulation happens, when tuberculization goes on in common with accidental disease. We have already enumerated some of the powers which, in our opinion, are engaged in the function of secretion, and return again to this interesting inquiry. There are four powers at work more especially in the secretion of tubercle, which eliminate it from the blood, and these are the tuberculizing affinities of the capillary, its power of imbibition, the force impelling onwards the fluids in circulation, and, fourthly, the formation of tubercle without the vessel.

The power that elaborates tubercle from the blood belongs to the capillary, and we conceive it to be nothing short of a morbid alteration of those affinities, by which vitality forms the varied secretions of health, but in particular those of nutrition. The chief elements of animal matter are fibrine, gelatine, and albumen, how various soever may be the organic forms they assume. Coagulated lymph is one of the simpler products of morbid changes, and preserves enough of organizable properties to become tissue, fibre, and vessel. Tubercle is a farther alteration of disease, and although of analogous parentage, is not thus organizable; and pus is still more remote. Lymph is produced by the first of the series of deviations of the vital affinities from the normal order of health, which eliminate fibrine for secretion from the blood. Fibrine is required almost every where in nutrition; and likewise, the exudation of lymph is nearly as general, although accidental in its site. The affinities of tubercular composition are another variety of morbid changes like those of fibrine, but so very complete and remote, and preserving so little of the usual organizing properties as to be in no manner fit to prepare an organic matter of equal character. However a very slight tendency still remains with it for a cellular arrangement, seen in the quantity of adhesive matter which binds intimately together the mass of globular concretions in mature tubercle. Were we to give a scale of degrees of morbid alteration in these cases relatively to one another and to healthful function, we would regard the forces forming coagulable lymph in the proportion of two, tubercle three, and pus four; these figures would represent the deviations from health of the vital affinities which eliminate fibrine from the circulation for the various purposes of the economy. Measuring, therefore, the series of changes in the case of three such common morbid alterations of the vitality, we compare them to the process of healthful nutrition estimated as one.

We look upon the capillary as a little laboratory of secretion, whether for nutrition or excretion, or the lubrification of

tissues and membranes. But it is the laboratory of vital affinity, and notwithstanding we cannot appreciate the peculiarities of the vitality productive of substances of such various aspects, still its power is evident in what it produces. This power of collecting the elements of secretion, conveniently placed in the capillary, is the first cause of this important function. It eliminates them from a mass where many influences are at work, and, forming them into the material proper to the locality, attracts the secretion in embryo to the vascular wall, a position both favourable and necessary for its passage outwards. If it were not so, even if we could suppose the secretions already in the blood, they could neither be separated pure from the vessels, nor on their proper sites, unless a suitable mechanism of the capillaries provided for its evacuation, as various as the material to be voided. But no provisions either of a mechanical or purely physical nature can possibly answer these purposes. They are accomplished by several means, and the vital affinities form the hinge of the whole.

The healthful are more various than the morbid secretions, if we include among them those of nutrition. Each of them must depend on a special power in its locality for secretion, which eliminates it from the circulation, and it is easier for us to conceive the numerous alterations of the vitality in disease when we consider the variety of secretory function in health. The forces of vital composition in both cases are essentially the same in kind, although having so many shades of difference; and the phenomena of the whole make the peculiarities of any one more familiar to us.

The power of imbibition of the capillaries is most useful in secretion. To perform this function a vessel is requisite, which can assist exudation outward of blood, and balance the impulse of the circulation. The globular constitution of the blood, making it a mass of solid but elastic particles, that cannot escape except through an opening of proportionate size, and, on the other hand, the uniform and compact membrane of the ca-

pillary devoid of perceptible pores, answer those purposes admirably. The preservation of the blood within the vessel, securing thus far its proper circulation, brings the material of secretion and nutrition to every point where the vital affinities, according to local peculiarity, perform the part of a laboratory. The capillary affinities attracting the matter of secretion on to the vascular wall, bring it into most suitable circumstances to pass outwards. It is at this period that a membrane imbibing as readily as the capillary is of indispensable value, sufficing to imbibe moisture, to preserve every fibre and tissue soft, humid, and supple; it must now, of necessity, take up the secretion special to the locality and already attached to the capillary. An imbibing membrane, even without visible pores, assures a passage to secretions in the state of fluid, and enables the power propelling the circulating mass to aid efficiently in their evacuation from the vascular apparatus. Wherever passage is given to fluid by imbibition simply, there also it may be expressed, and the escape of it may be increased by any force we apply short of rupturing. When the vital preparation is complete for secretion, and the embryo liquor besmears the interior of the capillary, and this has imbibed it through, then secretion may go on easily. An outlet once formed, it is afterwards voided with facility outwards by the pressure of the column of circulating fluids, and it is nothing impossible that the capillaries accommodate themselves more, by degrees, to the passage and evacuation of a morbid production, its elimination becoming more like healthy secretion. This is seen in the dryness of a newly inflamed membrane, which, even when quite bloodshot, requires some interval to prepare for morbid secretion, that at length flows freely and in plenty. Besides, old constitutional evacuations proceed at length so calmly as to resemble very much the secretions of healthy organs. The mechanism of secretion becomes so perfect in the part as to afford equal facility for morbid deposition, as that of the liver does for the evacuation of its bile.

The propelling force of the circulation is, doubtless, an important aid to secretion, but it is not the only physical provision which facilitates this function. There is, besides, a peculiar mechanism of the capillaries themselves. The organ engaged in secretion is fuller of blood, its smaller vessels are gorged with it, and the capillaries are much distended. Distention of the capillary does not, however, necessarily imply laxity, but greater openness and less compactness. Different from what it is in hæmorrhage, then the capillary is wide, and more open in secretion, without the laxness and loss of tone which renders its rupture easy. It is not difficult to conceive that this condition of the capillaries is highly favourable to the passage of the liquor of secretion out of the vascular apparatus. Compact enough in ordinary circumstances, to prevent simple exudation of even aqueous particles, a membrane might thus become capable of it by sufficient distention.

The impulse of the circulation acts in secretion by expressing any secretory liquor attached to the capillaries directly out of the vascular apparatus. Wherever a way is prepared for a homogenous fluid, it contributes to pass it through by pressure. We comprehend among the forces of circulation the impulses of the heart on a globular fluid, confined in a system of resistant tubes, and possibly also, a special contractility of the vessels. There are, besides, several contributing powers of circulation, which, however, are entirely accidental, but it matters little whence the forces of circulation are derived, as a compressed fluid is the ultimate power which aids secretion in every case.

The formation of the morbid matter external to the capillary is of more importance than is commonly attributed to it. The assumption of more or less consistence by the matters once separated from the circulation must promote the purposes of secretion in no small degree. It may do so by aiding the flow of secretion from the capillaries, and by impeding its untimely absorption again into the vascular system. Thus, in becoming

consistent enough to resist membranous imbibition in comparison to matters of more marked fluidity, it leaves the secretory capillaries at liberty to pour forth always new secretion, without the difficulty which might result were they bathed on every part with a homogeneous fluid. Besides, it should equally hinder the return of secretions already formed into the circulation by simple imbibition.

The earliest form of tubercle, in an uncombined state, met with in the corpse is the grey granulation when newly deposited. This body is secreted as a somewhat clear fluid, which, increasing gradually in consistence, concretes into a tough, and lastly, friable mass. The most recent examples of it we have seen were minute greyish bodies, like grains of millet seed, scattered throughout the spleen of tuberculous infants. They were about the consistence of gluten of grain. If we inquire farther what may have been their appearance at an earlier period, a fair means of settling the question will, perhaps, be to refer to the vesicles of scrofulous ophthalmia, which are not seldom followed by condylomatous growths, resembling much punctiform tubercle.

Originally, therefore, they are of a glutinous fluid nature, more or less consistent, which only becomes firmly solid in process of time. Probably also the same quality of thing is secreted, when the deposition of tubercle befals larger portions of the frame, and when infiltration takes place into the substance of any part, or from a secreting surface. Once having attained the exterior of the capillaries by means of other conspiring powers of secretion, it loses partially the fluidity, which characterized it as liquor of secretion, whilst passing through the vital laboratory of the vessels. This change of consistence we consider of important use in the secretory function; but it is not easy to exemplify the influence of assumption of form in the case before us by any artificial procedure.

Paper making, nevertheless, offers a series of changes, which may represent indistinctly some shades of likeness to the vital

process eliminating tubercle. The boiling of the crude ingredients, the escape and distribution of the fluid, the concretion of this on the incline to the first roller, and its gradual progress from one to another until dry paper is perfect, are so many stages of its manufacture. The fluid, before it is cooled in the concreting trough, will represent the liquor of secretion, while passing through the capillaries; and the heat keeping its fluid up to this period, personifies the influence, which the tubercular affinities of the vascular walls exert in preserving in perfect liquor the secretion composed by them until beyond their sphere. The boiling fluid once extended over a surface where its heat is lost, concretes into a tenacious mass, leaving all excess of water aside; probably so it is also with tubercle, when it gains the outside of the vessel; its more solid particles then concreting, leave the aqueous part for absorption. Thus, portions added persistingly in this manner, accumulate, at length, into a considerable mass, and the changes into a firm concretion go on in equal measure, until the tuberculized tissues fall into dissolution, and the yellow matter of tubercle occupies the locality.

How the concreting power aids the secretion, is not hard to conceive, for withdrawing the tubercle wholly beyond the sphere of the capillary, and subjecting it to a new order of forces, it keeps the outer surface of the vessel free for continuous evacuation of whatever is eliminated from the circulation. This would scarcely be so incomplete, were the capillaries bathed everywhere with the same quality of fluid. Let a cylinder, for example, of some membrane, represent the capillary of a blood-vessel engaged in secretion, whose walls are compact enough to maintain a column of water flowing without oozing through it under a given pressure; we will suppose it immersed also in water, and notwithstanding it may possess a high capacity for imbibition, it can add but little to the quantity of external fluid, because it would imbibe water as well inwards as outwards. There is such an equilibrium in the case we are supposing be-

tween the perviousness of the membrane, and the pressure of the fluid, that the imbibition will nearly resemble that of membrane of any form immersed in homogeneous liquors. It will go on from one surface to the other equally well. But it is otherwise with the capillary in secretion, for not only does the resumption of more consistence by secreted matters, sometimes help this function, but also in every case the impulse of the circulation.

As to what comes of any excess of water when the embryo of tubercle concretes, we may account for it in several ways. However, it is after all a necessary condition, that it should be over plentiful, in order to secure sufficient fluidity in passing through the capillaries. The vital influences at work are perhaps enough to preserve matters perfectly fluid, which otherwise might have a marked degree of consistence, when once withdrawn from the laboratory of the capillary. Gold, solid and firm under ordinary circumstances, is yet easily reduced to the fluid state by proper means. But it still does appear that tubercle may form by gradual deposition, commencing very watery, and getting more consistent. This is often seen in the vesicular looking bodies of the conjunctiva, when affected by scrofulous inflammation, and may also happen in other neighbourhoods, and in more extensive disease. When, however, an excess of watery particles is present, it may even be absorbed directly from the point where the secretion has happened. If it is so, then the absorption must either be accomplished through the general circulation, or the lymphatics. It may possibly be either, or both ; but if it is effected through the former medium on the points of secretion, it presupposes a slower process of tuberculization, and the alternate progression of this with absorption, or in common with it. The aqueous part may also diffuse itself through the neighbouring tissues, by their imbibing it on all sides, and it may thus gain the circulation by sanguiniferous absorption into vessels not interested directly in the secretion of tubercle.

Besides, the negative advantages of the assumption of form in morbid and healthful secretion, the concretion of tubercle must also be a powerful means of preventing its untimely absorption into the circulation. Tubercle in general, if not always, undergoes a series of changes peculiar to it, as a needful preparation for its removal in this manner, from the economy. For white and yellow tuberculous matter, this is the chalky transformation; and it is questionable, how far every other form of tubercle follows the same routine. It, therefore, remains to be proved, that grey granulations are taken up by absorption without going into yellow and chalky matter. The absorption of tubercle without a previous chemical change, is not easily conceivable. If it does sometimes happen, this most probably occurs only when in the recent state. But we are not to conclude as a matter of course, that granulations have been removed, when we find cicatrices proportioned accordingly, and scattered in a similar manner throughout the lung. If such could be proved to have occupied previously their site, still we ought not to conclude positively on their removal by absorption, without having passed through the ordinary series of changes of larger portions of tubercle. The most remarkable reason, however, in favour of immediate absorption, is the occasional absence of the gritty salts of lime in a cicatrix.

We have pointed out the probable application of the power of assumption of a consistent form, the secreted matter in the deposition of tubercle; and our remarks will, perhaps, apply with equal justice, as well to every similar production of disease, as to some of the normal secretions of health. This appears to us the case with those secretions of a slimy nature, meant more especially for the lubrification of surfaces of membranes, and required only in restricted quantity. Thus mucus is wanted only in a thin layer, to cover a surface exposed to outward violence or friction. Tranquil secretion of it only is necessary, and the quantity indeed small in proportion to the great extent and extreme vascularity of the membrane, on which

it is formed. The assumption of a slimy form might suffice for its ready separation from the vascular system; but we find, over and above this peculiarity, that it contains numberless globules of a comparatively solid nature; and here a new force comes into operation. We will not insist so strongly on the influence of the assumption of globular form in the elimination of mucus, as of some other secretions. Although we do not doubt of its contributing in some measure to the secretion, yet we think these globules serve another purpose, perhaps, of more than equal importance. They are possibly a quantity of animal matter, while serving the purpose of lubrification, still preserved in a proper state for absorption again into the great reservoir of nutrition.

There are some glandular secretions, however, in which the assumption of the globular form by the more consistent portion of them acts an important part. This is particularly the case in regard to milk. Here a fluid of a determinate consistence is required; the reservoir for its accumulation is restricted within a small space; and it is needed in considerable plenty. The mammary glands are small in proportion to the great supply of milk necessary for the nourishment of the offspring; and the very consistence of it almost points to more than the ordinary means of secretion. Here we conceive that the power which constitutes the globules, and called by us globular creative force, comes in aid of the interesting function of these glands.

The globules make up almost the whole of milk; and they only have enough of serosity to hold them in suspension. Their exceeding variety of volumes would seem to signify, not only high capacity for globular formation in the embryo secretion, but also a continual addition to their dimensions possibly at a later period. Those integral affinities derived from the vital laboratory of secretion, or the power by which the globules form, is here a real force promoting secretion. We have sought, in a former essay, to distinguish it into two divisions—calling

that which endows the globular matter with the form of its kind, globular creative force, and the means by which they may increase in volume, globular growth.

We consider these powers as a sort of vital chemistry, derived essentially from the living tissue of the secretory organ. It seems to us one of those changes, which the liquor of secretion must necessarily undergo, as a link in the chain of organic phenomena. Thus far only we consider the globules vital; but we equallize it in no degree to the life of the individual. Its vitality is nearest to that, which is apportioned to any particle of fibre or tissue separately; and therefore with the entire economy, it may share in the influence of life.

The accidental formation of a sort of globular bodies by mixing a chemical agent together with some organic products otherwise without them, is no positive proof to the contrary, of forces holding together the globules, as separate existences in the secretions. Organic matter is still interested in this phenomenon; and at the farthest, it but signifies how probable it is, that the remoter influences of organization are more familiar to us than people generally imagine.

It is, perhaps, just to argue, that a power capable of combining a whole of any matter into particular forms, must also extend its influence over its particles, in drafting them together. This is the case in our opinion with respect to the forces engaged in the constitution of the globules; and we may hereby understand, how the assumption of globular form ought to be of very important services in secretion. Thus the capillaries of the mammary gland, which are endowed with vital properties for the composition of the embryo of milk, eliminate it from the circulation; and having once gained the secretory surface of the milk vessels, it assumes directly the globular constitution. The liquor of secretion attains this position, not only by the ordinary means already pointed out by us, but also by the imbibition of the secretory surfaces, in which the capillaries are woven, as in the case of the milk vessels; and

on this point the force of globular formation aids powerfully the secretion. The power composing the globules of limited volumes and definite forms, must accumulate their components; and this assumption of form going on in innumerable points at once, will not only convert the whole of the embryo liquor, as soon as it gains the surface of the milk vessels, but also in drafting its particles together, it will draw continually a new supply. Then again, that ability they have of adding to their volumes, enables the globules, by a process of addition, to attract fresh elements from the liquor of secretion, and this, being common to the whole of it, must assist lactation, if not by drafting outwards the liquor of milk, at least by rendering its return into the circulation impossible for the time. Let us suppose, for example, whatever may be the quantity of the embryo of milk, that it is endowed with the property of globular formation; and that the full complement of globules, possible for the instant, has already been made up, and left an excess of embryo diffused extremely on numberless points, but in too small a quantity for the assumption of the given volume of the globules; still the globular creative force, acting on the most minute particles of embryo on the secretory surface, will attract from such points the complement of component matter. It is thus upon the principle of forces combining a whole in the state of aggregation, accumulate its particles from every legitimate source in their sphere of influence, that we look for immediate aid from the globules in secretion. Thus it is also that the increase of the volume of the globules, after having put on their characteristic forms, becomes a help in this function. The forces of growth here are probably a sort of mere affinity of like for like, working upon an established point, and resembling remotely the growth of fungus, or the increase by crystallization.

Besides the direct promotion of the secretion of milk, the globules serve beyond a doubt other purposes. It is probable they preserve this fluid in a condition fit to prevent its return

by mere imbibition into the circulation. Probably, also, they maintain an organic product in a state of excellence for food; in keeping it in a high degree animalized. But our purpose being particularly to explain the mechanism of secretion, we will not trace these thoughts farther, but endeavour at once to show the relationship of secretory membranes, whether membranes, sacks, ducts, crypts, or canals, to the other instruments and powers of this function.

Membrane has a high capacity for imbibition, and in this way quickly gives a passage to the embryo of secretion, and fluid secreted by neighbouring and inborn capillaries. It is not, however, unworthy of consideration, how far the secretory surface has a special affinity for the liquor of secretion, in perfect harmony with the capillary affinities. If we could show good reason for this, it would be very desirable; but the only one we can offer is, the rapid secretion of a saline fluid in various localities upon membranes, or into membranous vessels, and which is otherwise applicable only by the eliminating power of the capillary, the impulse of circulation, and the imbibition of the secreting surface. This may, perhaps, justify us in suspecting some other power at work, particularly in glandular organs, than those we have already pointed out, as accomplishing accidental secretion into the textures of the body. Here we may ask, is the secretory duct in a state of vital apposition to the capillaries, so as to make the current of vital influences pass from them to the former, and thereby bearing along the liquor of secretion to a free surface, where it ceases to be swayed over any more? This is easier conceivable, if we bring to mind the galvanic currents of chemical change, and the remarkable power of the poles of the galvanic battery to alter saline solutions, and to separate through membrane, the salts bearing affinity, whether to the negative or positive pole. Would we be right in supposing a secretory duct, enwrapt by capillary, to represent a pile of vital chemistry, as the cylinder of zinc wound spirally with copper wire that of galvanism? In one case, changes in the composition of metals and gases

go on; and in secretion numberless alterations of proportion and composition of more delicate elements are equally in full operation. Be this as it may, there does at least appear to be a degree of vital influence belonging to secretory surfaces, analogous to the capillary affinities, which facilitates them in drafting through the liquor of secretion. Whether this power of attracting it to themselves, and keeping it from surrounding tissues is special, and innate to the secretory surface, or merely diffused into it from capillary, is a question of much interest. We incline to take the latter view of it, and consider the secretory surface partaking in due proportion of the vital affinities of its own capillary system, which eliminates each particular secretion, and we do so, without drawing in doubt the probability, that some peculiarity of organization in secretory membranes, is the ultimate instrument of every special secretion.

However, it is not possible to prove positively, that secretory membrane has a vital endowment special to each locality. But if we do not allow this, we must explain the mechanism of secretion by membranous imbibition, capillary affinity, and other appropriate power of the function.

The high imbibing power of membrane is either seconded by an open surface, or together with this by a back ground of textures comparatively slow of imbibition. The muscles, and fibrous, and ligamentous substances, walling thoroughly the abdomen, are likely in no measure to draft up the material of secretion. They tend, on the contrary, to impede its progress outwards altogether.

Then again, the power of globular formation proper to the free and firmly polished surface, or villous coat, on the other parts of some secretory membranes, together with the assumption of some marked consistence, when once beyond the influence of the vascular system, are so many direct agencies to empty the secretion accordingly. Thus, by a number of wise provisions, whatever escapes from the vessels in health, is brought by the forces detailed by us, to an appropriate locality.

There are, however, four distinct series of secretions in

health, distinguishing them by their most prominent physical qualities, to wit, the perspiratory, the watery, the slimy, and the globular. Three of them, or at least the perspiratory and watery, stand apparently in contradiction to the importance which we have attached to the uses of the globules in the function of secretion. But if we inquire farther into the whole of their details, we will find they rather confirm than invalidate the probability of our conclusions. Thus the heat of the body, and the surrounding air not saturated with moisture, carry off the perspiration of the skin, and the respiration that of the air passages. The urine, the tears, and the saliva, are borne away, as soon as they are poured forth, and being very fluid, they have no need of a globular constitution. The saliva is mingled with the food and swallowed, or serves straightway to moisten the fauces and mouth. The tears are secreted as a fine saline liquor, and voided from the glands secreting them, over the conjunctiva, to be carried off by the lachrymal canal, or else gush from the eyelid in streams. The urine is drained off from the points of elimination to a distance, as soon as it attains the interior of the urinary caniculi. Here are several provisions to insure its evacuation, and thus to second its secretion. The pelvis of the kidney is a ready receptacle of it, and the mamillary terminations of converging tubes secures against its return. Then again the ureters convey it into the bladder, whence it may be voided outwards, preventing most completely any inconveniences of over-fulness. There is rather an inclination to a void, than distention in the excretory apparatus of these organs, and their contractile movements express or carry forward the fluids they contain; and in the intervals of relaxation, they receive the secretion readily.

There is another provision in the secretory apparatus, to assure the evacuation of such fluids without danger of absorption of them back untimely into the circulation. The excretory passages are coated with mucus, and this slimy matter does not transmit water at all readily. It preserves its consistence with-

out extraordinary affinity for more fluid, as a more or less saturated hydrate.

It may be said, what use is their in searching profoundly into the mechanism of secretion for the purposes of practical medicine? We reply at once for the physician of full experience, and not misled by doctrine, perhaps none; but for the multitude, it is pregnant with interest and worth. Few of us, there must be, who have not had reason to lament the errors of practice, which wrong principles of pathology lead to; and perhaps the worst of them hinge upon the question of morbid secretion and vital change. Few persons are wholly freed from the warping impressions of scholastic education; and in a tour through several nations and more universities, we have had too many proofs of the power of the dogmas of schoolmen over the understandings of men. They govern the reason of people, producing, as it were, varieties of popular monomania. And so much has doctrine prevailed over patient induction on the question of morbid deposition, that our knowledge of its phenomena lay for a long series of years a sacrifice of opinion; and every school deemed its own views right with the utmost self-complacence. To shake the hurtful confidence reposed in the doctrines of the schools, to set the mind of the medical world again at liberty, for a purer course of observation and practical inquiry, is a work devoutly to be wished.

It is this we aim at in the exposition of the phenomena of healthful and morbid secretion. We seek to show its freedom from many of those morbid conditions, both real and fanciful, that have been ascribed as necessarily common to it on every occasion, by the medical zealot. If our observations help in the demolition of the errors of ages we shall have much satisfaction, though we may not succeed equally in forming a better model for men of art to mould afresh and adorn in years to come. It is, therefore, in the relation of the phenomena of secretion to morbid deposition, and again of a sound pathology to therapeutics, that a thorough knowledge of this function becomes highly valuable to the medical inquirer.

Two phenomena of tuberculization should awaken much interest on the part of the physician, to wit, the very common development of the malady on points, and again, the irregular spasms, as yet questionable, of the fibres of the lung, inasmuch as they may cause the interruptions of the vesicular murmur in early phthisis.

It may properly be asked, in how much does the fact of punctiform tuberculization recommend the full use of medicines which overrule pain when confined to points? There is, perhaps, a bond of union of all vital phenomena to one another, and many means able to check one series of symptoms, and also to calm much disorder of another kind, but similar as to locality and vital relationship? Would it be too much to look for aid against tuberculization on points from remedies which are so valuable in spotted affections of the skin? Would the supposed irritability of the fibres of the lung be proved, and the muscular erections of the walls of the chest indicate to us the full use of those means of cure which govern spasm and allay irritation? There is, probably, a near connexion between the state of morbid preparation of the lung for tubercular deposition about to follow, aud the respiration *entre coupée*, and many remedies which might overrule the one, might also command the other of those series of phenomena.

Whatever therapeutical reasons may explain the fact, the preparations of opium, hemlock, digitalis, stramonium, hyoscyamus, aconitum, belladonna, and cherry laurel, have been in all times in vulgar favour as remedies for tubercle of the lungs in every period of the malady. But it is especially the question here, as to their promise of aid in warding off early tubercular change.

We have continued our researches into the matters of cough, and found the tuberculous portions of lung in other series of cases, both in Edinburgh and London. During the period of softening and excavation of the lungs, sometimes pieces of pure tubercle are coughed up—so pure, indeed, as to be in no manner distinguishable from portions of the morbid product

taken straightway from the lung. Not only do they contain fibres of pulmonary texture, and exactly alike to those of scrofulous lung, but the tubercle globules are perfectly characteristic, and answer to the chemical tests, as well as others taken from cavities. Specimens so complete in their characters as these, are however not frequent in the expectoration, but others of less marked analogy of appearances are by no means uncommon.

The most ordinary examples of tubercle of the matters of cough possess some of the more glaring features of tuberculous lung, but they present enough of difference to point out a secondary change from prolonged digestion in the cavity and air passages. When separated from the substance of the lung, and withdrawn from the direct influence of the living tissues, they become subject almost wholly to the physical agencies around them. Thus, immersed for a longer or shorter time in muco-purulent fluid, warm as the lung and air-tubes, they are coughed up at length, after tossing to and fro amid cavernous bubbles, and in the violent efforts to ascend the windpipe. If any farther vital change is experienced by them during this digestion in the secretion of an organ so highly in a morbid state is impossible to say, but at all events they do acquire peculiarities of aspect worthy enough of note.

It is most probable expectorated tubercle is very often the portions of tuberculized lung, which are less advanced in softening, but separated away by dissolution of the mass surrounding them. Their form is often lenticular, but not regularly so; they are mostly broader than thick, having thereby, at times, a wafer-looking shape, as if they were portions of the tubercle lining cavities, and we have found bodies exactly similar in extensive excavations of the lungs. They are opake-white, yellowish-white, and greyish-white, according as it may be. Some of them are firmer in comparison to others; but generally they are of soft consistence, and easily compressed by the object glasses of the microscope. They are evidently softer when expectorated than on their separation from the mass of lung. Again,

they have more consistence than particles of ripe tubercle about to loosen altogether into globules. This is probably owing to their primitive quality on being cast off from the mass of disease. We have seen the firmest tubercles soften by prolonged maceration in water during summer; and this accords with our opinion that it is for the most part imperfectly matured tubercle, which gains the exterior in morsels mixed in sputa.

Such particles of tuberculous lung viewed by the microscope, are seen to consist of smooth and broken globular concretions, and some minute orbicular corpuscules. Throughout the whole are scattered many dark points, and we may question if they are or not pigmy points of solid matter, and projections upon fragments of tubercle? Besides, the globules lie in a mesh of fibres of lung, which have lost a sort of tough plastic matter particular to them in health, and their separated threads loosened in this manner, appear more distinctly to view. These threads are about the size of ordinary sewing cotton, when magnified five hundred fold. Arranged in bundles they form rounded triangles, as we have described elsewhere; sometimes possessing much of their primitive elasticity, they are, however, for the most part more friable, and broken with greater facility. This alteration depends on some integral change of their elements, and their entering into new arrangements in relation to one another. The fibres preserve, however, the whole of the broader features of those of the pulmonary parenchyma in the healthy body. The fibres thus perfect together with the globules we consider diagnostic of softening tubercle.

There are, however, other specimens of fibrous sputa which are not so easily reconcileable with tubercle. To the naked eye they are quite similar to those we have described, but on examination of them with the microscope, we find variety enough to make us hesitate before forming a decisive opinion. The globules are not distinct, or they do not respond properly to chemical tests. They are readily reduced to a granular mass, and the fibres, though at times similar to the preceding exam-

ples, are often very different. Then, instead of the supple fibres in bundles, as in pure tubercle, a crystallized-looking mass, having a similar arrangement, but most brittle, supplies their place. It here becomes a question, are they really *ab origine* tubercular lung, or some accidental product of this organ in consumption? or do they mingle in the sputa from parts about the mouth?

If we look upon them as altered tubercle, we must then consider the fibres as having become the point of concretion for some salt, and hence their brittleness and remarkable change of appearance. If we are to suppose them to be portions of white matter, only resembling, though peculiar to, tuberculous lungs, then we may look upon them either as a vegetable growth in tubercle, like the vegetations said to be in the scab of favus, or regard them as sloughs from ulcers of the air tubes. The latter source, in the case we are supposing, is more likely to prove the real one, and some of the brittle fibres may eventually prove themselves tuberculized capillaries.

It might well be suspected that a matter different from tubercle in so many respects might come from other sources than the air tubes and the lungs. But that they are not derived from the fauces and mouth, nor teeth and gums, we are justified in believing, because the expectoration of persons who kept their mouths clean by gargling, has offered us examples of this form of fibrous sputa; and we are aware of no growth in those parts which would present the like characters. Besides, up to this period of our researches we have met with those appearances only in cases of tubercle of the lungs.

We have examined the ordinary substances used for food by inmates of an hospital, and we have found no near resemblance between the articles of diet and tubercle. Potato, groats, barley, rice, have no analogy. The medulla of the stalks of cabbage have a distant appearance in the microscope, answering to some of the least characteristic portions of our third form of fibrous sputa; but we have found examples of this, where no cabbage had been eaten, if we may credit nurse and patient.

Among the animal foods examined by us, we have found none presenting the character of tubercle of the lung. The cellular parts neither resemble pulmonary parenchyma, nor are they devoid of fat. The differences are very remarkable in the two cases; and the muscular portions of them are so easily recognized, as to render it impossible to mistake them for any morbid product.

Were it possible on occasion, to boil the soft fibres of muscle of some fish to dissolution, leaving them to coagulate in a mesh of cellular texture, we do not know how much resemblance they would have with tubercular lung. But the solution of muscle would not be easy without dissolving at the same time other fibrous structure; and we may prevent any error from this source, by the patient's abstinence from such articles of food during our researches. We will here subjoin a few cases of cough in which we have examined the sputa indiscriminately in tubercle and catarrh.

TABLE.

No.	Name.	Age.	Cough.	Ill.	Before.
1	Mackay, W.	40	6 months	3 months	. . . .
2	Major, Samuel	55	9 months	6 months	. . . .
3	Jones, Anne	41	3 months	6 weeks	. . . .
4	Charpentier, E.	51	13 mo.	10 mo.	. . . .
5	. . . . .	. .	. . . .	. . . .	. . . .
6	. . . . .	. .	. . . .	. . . .	. . . .
7	. . . . .	. .	. . . .	. . . .	. . . .
8	. . . . .	. .	. . . .	. . . .	. . . .
9	. . . . .	. .	. . . .	. . . .	. . . .
10	. . . . .	. .	. . . .	. . . .	. . . .
11	. . . . .	. .	. . . .	. . . .	. . . .
12	Williams, N.	41	11 mo.	3 months	. . . .
13	Bond, James	35	Hour	6 months	4 winters
14	Maxwell, James	45	5 months	5 months	. . . .
15	Knight, William	23	6 months	6 weeks	. . . .
16	Hayes, Martin	46	4 years	1 month	3 winters
17	Williamson, L.	18	12 mo.	8 months	. . . .
18	Gibbons, Thomas	47	14 mo.	8 months	. . . .
19	Brown, Anne	49	2 years	11 mo.	. . . .
20	M'Hugh, John	64	10 mo.	3 months	5 winters

TABLE.

Blood.	Family.	Cavity.	Dulness.	Crepitus.	Sputa.
0	2	1	. . . . .	. . . .	tf.
1	1	1	. . . . .	. . . .	f.
0	1	1	. . . . .	. . . .	?
1	0	. .	. . . . .	. . . .	f.
. . . .	. . .	1	. . . . .	. . . .	f.
. . . .	. . .	1	. . . . .	. . . .	f.
. . . .	. . .	1	. . . . .	. . . .	f.
. . . .	. . .	. .	. . . . .	large crepitus	f.
. . . .	. . .	. .	. . . . .	fine do.	f.
. . . .	. . .	1	. . . . .	. . . .	0
. . . .	. . .	1	. . . . .	. . . .	0
. . . .	0	1	. . . . .	. . . .	. .
3	1	. .	. . . . .	in the top of both lungs	0
0	0	0	. . . . .	mu. ra.	0
. . . .	. . .	. .	. . . . .	. . . .	. .
0	. . .	. .	. . . . .	. . . .	0
3	1	1	. . . . .	. . . .	f.
0	0	1	. . . . .	. . . .	f.
. . . .	. . .	1	. . . . .	. . . .	f.
. . . .	0	0	0	. . . .	0

Seventeen of these cases only were tubercular; and thirteen of them had fibrous sputa, but in one instance doubtful. Fourteen had cavity discernible by the ear; and four of this number offered no fibrous sputum; but, again, two cases without cavities positively discoverable by auscultation, presented fibrous sputa. One case had only auscultatory signs of limited hepatization, probably tubercular; and the other had mucous rattle and gurgle throughout the lungs; the history of the man making it most probable, that a very general softening of tubercle existed. A third individual only presented the signs of tuberculization going on by the process of catarrh in the tops of the lungs. Three cases besides could not be called tubercle of the lungs.

Case 1. presented very pure examples of tubercle in the sputa. He died just at the termination of the stage of eva-

cuation of the morbid matter; and vast empty cavities occupied the left lung. There were many particles of tubercles loose in them, exactly alike to what we found in the sputa. The Case 2 is very similar, but promised to endure longer.

Case 3 has a small cavity quite at the summit of the right lung, which has probably emptied itself already. She appears suffering more from the effects of a previous disease, than the extent and progress of tubercular softening.

Case 4 was attacked by an inflammatory affection of the liver and rheum, after living in a damp room; shortly afterwards, cough set in with much expectoration. The cough became so troublesome, that in the space of three months, she was so ill as to lay up entirely; and she has been confined ever since, now ten months. Since cough began, she has expectorated blood at various intervals. Her sputum amounts to four ounces or thereabout in twenty-four hours. It is thin, bright straw-coloured pus in a very slightly adhesive mucosity. Its smell is purulent, or like boiled turnip. The clavicular regions are dull, and the left very much sunk, much more so than its opposite. No hectic, no wasting, no sign of cavity; nor is vesicular murmur absent. We have found fibrous sputa; but as she eats all sorts of fowls and fish, we cannot trust to her promise, to wash her mouth well after eating, and to mix nothing in the matters of cough. We therefore do not look upon our observation in this case as satisfactory.

Cases 5, 6, 7, 8, 9 were all recorded tubercle of the lung. Three of them had cavities, which were readily detected by the ear. One had only a very general gurgle or muco-purulent bubble over most part of the chest, but more remarkable at the top of the lungs, though without evident cavernous respiration. Another presented the signs of very limited hepatization, probably tubercular, circumscribed dulness of the interscapular region on the left side, and inconstant crepitus on a point, but no positive sign of cavity discoverable by the ear.

Cases 10, 11 had old cavities, and the first crop of tubercle

had been evacuated. They were without hectic, and the sputa were only three or four nummuli daily in the one case, and in the other the expectoration was little, and rather mucous than purulent.

Case 12, born of a most healthful family, married three years ago; but his wife gave him syphilis. She died of consumption of the lungs. Since his union with her he has been reduced in circumstances, and to actual want for many months. He attributes his loss of health to the venereal malady, and his cough to cold from damp at home and exposure abroad. His expectoration was about five or six drachms of a mucous matter, with little pus, when we examined it. Then he had no hectic, and the first development of tubercle had ceased, and the malady was stationary.

Case 13, a sufferer by habitual catarrh from childhood, has always had more or less dyspnœa. The last four winters he has suffered with acute catarrh, and distressing shortness of breath during many weeks. For the last six weeks he has kept his room or bed. He has coughed up streaks of blood at these intervals. There is indistinctness of murmur in the top of right lung, which is a shade less clear on percussion. There is large crepitus behind in the tops of both lungs, and in front also, on the right side; no cavernous respiration. The expectoration is chiefly a clear, slimy mucus, with some froth, and a little sediment of pus. No hectic, nor auscultatory sign of softening tubercle; but tuberculization is probably going on in the summit of both lungs.

Case 14 had an abscess opened in the right flank five months ago. Since he has coughed up plentifully a stinking, offensive sputum of a purulent character. He has no pain of the chest, nor has he ever seen blood in his expectoration; there is neither dulness nor wasting of the upper portion of the chest, nor sign of cavity. The respiratory murmur is heard on every point, but mixed with mucous rattle in the right lung, and particularly in the upper loba.

Case 15, cough and copious expectoration, having a most disgusting odour, supervening on dyspepsia aud pain in the stomach. The only auscultatory signs at all suspicious are interrupted respiratory murmur in the upper lobe of right lung, and an occasional soft *râle* in the superior spinal fossa of the same side. There is no dulness, nor wasting of the chest, but some muscular erection on this right side particularly. Sometimes the vesicular murmur returns suddenly, but at the next visit disappears again.

Case 16, not of a phthisical family; has had cough and shortness of breath for years. She recovered in fine weather, and is suffering from progressive emphysema of the lungs.

Case 17, of a consumptive family, is recovering temporarily from the first crop of tubercle, and the cavities are very nearly emptied. She is free from any hectic symptom, and is gaining flesh, and the expectoration has become again chiefly mucus, with shot-like granules. Particles of tubercle, however, are still coughed up.

Case 18, of a family in nowise consumptive; attributes his loss of health to an attack of rheumatism, and particularly to a course of medicine, probably colchicum, corrosive sublimate, or the like, as it was exhibited in form of drops. Large cavities have already formed in the lung, but considerable purulent expectoration remains.

Case 19, of a family not consumptive; attributes her cough from repeated colds got in the exercise of her avocation of washerwoman. Her lungs have wasted, probably by small excavations.

Case 20, not of a family subject to pulmonary decline; has had cough and short breath for many years. For four or five winters he has been ill enough to keep his room. His cough has been worse the last ten months, and very troublesome during the last three. Within the last few days acute catarrh has set in.

It would be useless to describe the microscopic appearances

of the articles of food, as any one may familiarize himself with them better by examination than the most detailed description.

The matters of cough are of various quality, but we have nothing important to add to the information before the public on this point. We will notice, however, some of the microscopic peculiarities of the expectoration in catarrh and consumption of the lungs. We may reckon four sorts of muciform sputa, to wit,—the clear slime, the sputum with numerous mucous globules, the sputum without them, and often with numberless layers of epithelium, and, lastly, shot-like clear granules.

The last of these forms of mucous matter is well worth attention. The granules are as large as swan-shot, or sometimes of the size of a minute pea. They are more consistent than the rest of the mucus, nearly orbicular in form, and clear as glass or the vitreous humour of the eye, but not so fluid. By a magnifying power of five hundred we have found them to consist of transparent matter, containing numerous globules of the volume of peas. These also are more or less transparent, of a vitreous aspect, and studded with black points, or corpuscules like poppy seeds. Such globules are very elastic, but when crushed between the glasses they break into fragments not wanting in regularity. They are, certainly, interesting-looking bodies; and we may inquire if they are not the product of some more important vital process going on at the point where they are secreted? We possess no satisfactory information for the settlement of this question, but many peculiarites of these shot-like granules in the matters of cough seem to affirm its being so. They form from the secretion, no doubt, of a very limited space; and being present in greater abundance in tubercle of the lungs, and often when the last crop is in course of formation, we will put the question, for time to solve, are they ever in any way connected with tuberculization on points? and, if so, what is the relationship? Not seldom we find separate globules of this class diffused in the expectoration, and possessing all their characters, except their not making part of a shot-like granule. Although properly somewhat grey and

clear, they may partake of the colour and opacity of the medium, holding them in suspension. They present, in consequence, a good deal of variety of aspect in the last case.

The quantity of epithelium in the mucus expectorated is often very great; but we are not prepared to determine how far its separation so plentifully may be a first organic change in catarrh. Those portions of mucous sputa, however, which contain numerous globules and loose corpuscules, and granular matter, like albumen, betoken a higher degree of animalization. Sputa of this kind approach nearer in kind to a more perfect order of animal matter; and we will ask, how much does it point to the coming into play of a vital process which eliminates albumen or fibrinous matters, instead of ordinary mucus? and how far it may be a step to tuberculous secretion into the air tubes? Our information, however, up to this period of our inquiries, gives us no satisfactory and positive solution of these interesting queries.

The clear slime forms part of almost all catarrhal expectoration. It is a transparent ropy mucosity, and only contains, accidentally, globules. It is most plentiful in acute catarrh, and especially when it supervenes on emphysema. It points to fulness of blood in the air passages, and the discharge of saline serosity in common with mucus.

Purulent sputa are met with in several varieties, to wit, pus globules in scarcely granular slime, pus globules in tough, highly granular slime, and, as a tough granular slime, almost, or wholly, without the globules, but having numberless dark points and transparent orbicular corpuscules like poppy seeds. This last form of sputum we have seen often in cases of old tuberculous cavities of the lung, and when found in recent expectoration it is the best sign of phthisis to be obtained from pus. It indicates an ammoniacal change from long delay, often in a cavern of the lung, but it is almost valueless in diagnosis, as any cause dissolving the pus globules may produce an analogous appearance. The granular matter is very similar to

what we see in coagulated white of egg. The pigmy corpuscules are remarkable, as we have found them as well in tubercle in the corpse; but we may inquire are they ammonia developed in a slimy medium, so as to represent minutest bubbles of gas? The dark points are probably the smallest of these last, and also the granules of solid matter beyond the proper focus of microscopic vision.

Morsels of this granular slime, rolled up into the orbicular form, resemble globules of pus, or sometimes even tubercle in some respects. This appearance is, however, purely accidental, and happens when granular pus is examined between the object glasses suspended in a drop of water.

Pus globules in a tough medium of granular slime assume very many varieties of appearance, not only by partaking of the colour of the matters in which they are imbedded, but also by the diversity of form they are subject to in an adhesive fluid, where their own elasticity cannot restore their shape. We have mixed tubercle globules together with this form of pus, and could not afterwards distinguish one from the other, the aspect of each of these being so modified by surrounding matters. This, we fear, will throw an insuperable obstacle in the way of our ever being able to distinguish positively tubercle in the sputa, except in fragments such as we have previously described. If, however, we had a solvent for pus and this granular slime that might not affect tubercle, the difficulty would be overcome.

We have sometimes seen a globular mass in the purulent expectoration of phthisis, composed of an aggregation of eight or a dozen sacular-looking globules of the volume of colchicum seeds. They have, generally, a brownish aspect, but are variously coloured, and the colour seems partly accidental. We have not been able to trace what relationship they may have to any morbid process in particular.

We have found blood globules plentifully in the sputa, and having spoken of them particularly in a preceding essay, we will not enter upon any details here. Besides, these purulent

sputa contain abundance of globules of fat, which alter their shape in many ways. They vary in volume from a mere point to the size of a globule of pus, or even larger. They have mostly, an orbicular shape, but may become flattened, and even so depressed on one side as to resemble a cell. They are bright yellow, and smooth on their surface. Their elasticity is so great that their form depends at every moment on external circumstances.

In purulent expectoration, particularly in phthisis, we have found various crystals. None of them are, perhaps, singular to the malady. One sort, however, having the form of a wafer the size of a six-pence, and a polished scaly appearance, and a variegated yellowish and slightly brown colour, we have seen also as well in tubercle after some days' keeping. There is another crystal, which, though seldom seen, is very remarkable. It resembles three pins placed at right angles to one another, with their points joining. We have met with it only in tubercular cases. Lastly, we have observed on several occasions a larger crystal of parallel prisms, which nearly occupied the entire focus of the microscope. It gives the appearance of large yellow globules inclosed in a mass of transparent strings running lengthways. This peculiarity is owing to the globules of pus being seen through a series of prisms.

We find also vegetable matter in the matters of cough. It is most generally in the form of long stalks, of the thickness of blades of grass to that of the stem of dandelion. They are easily broken, bent, or crushed, and in those circumstances they have a fibrous appearance. Sometimes they seem to have joints, and even to terminate in an asparagus-looking head. They are not singular to the expectoration, and may be seen in animal matter, generally after death.

Besides, we have observed, on one or two occasions, a very peculiar plant in the sputum of phthisical persons. From its variety we have made a drawing of it. (See *Plate* 2, *fig.* 2.) It possesses no farther interest, however, than to prove that the

powers of vegetation are not inert even in the secretions of the human body.

We will now take leave of our subject until, in some future essay, we shall give minuter details on the form and composition of tubercle, and its numerous and possible evolutions.

ART. II.—*Observations on Scarlatina.* By THOMAS FITZPATRICK, M. D., Licentiate of the King and Queen's College of Physicians, and formerly Physician to the Dublin General Dispensary.

[Read at the Dublin Obstetrical Society.]

THE records of medicine demonstrate, that scarlatina has exhibited the greatest variety in its character and symptoms during its prevalence at different periods as an epidemic, at one time, from the mildness of its form, scarcely deserving the attention of the physician, at another, remarkable for its virulence and fatal consequences, thus fully supporting the quaint observation of Darwin, that scarlatina differs from a fleabite to the plague. It is not my intention, on the present occasion, to offer any observation on the history of this disease, it is sufficient to remark, that the best authorities agree in the opinion, that however varied in type and symptoms, the one species of disease was described by Sydenham, Morton, Huxham, and Fothergill, and was identical in its pathology with the scarlatina of our day, which, from the time when it was accurately described by Withering, to the present period, has exhibited in different years the greatest variety in its constitution, thereby forming the character of the prevailing epidemic. The common division of scarlatina into three forms, although useful in instruction to the student, and frequently borne out in practice, is yet not sufficiently marked to obtain the implicit acquiescence of the practitioner, who sees, that in many instances the line of demarcation is obliterated; the first form gradually assuming the character of the second, and ultimately degenerating into

that termed malignant, however, sufficient cause exists to induce an adherence to this division, but at present I shall confine my remark to scarlatina anginosa, and scarlatina maligna, particularly in relation to the character they have presented of late years in this city. The student who examines the works of authors who have treated on this disease, will be surprized to find, that although no great difference is observable in the detail of its symptoms, yet, the greatest variety in the recommendation of remedies is remarkable. He will find one advocating cordials and tonics; another, diffusible stimuli; a third, acids; a fourth, purgatives; a fifth, bleeding and active depletion, and a sixth in favour of cold effusion; but minute investigation will demonstrate, that the proposers of the three first plans of treatment, recommend that due attention should be paid to the approach of inflammatory symptoms, while the advocates of the three latter are cautious in the promulgation of their doctrines, and advise particular observation to be directed to the accompanying fever; thus, Dr. Armstrong, in recommending bleeding and strong purgatives, says, that these powerful proceedings must be confined to the stage of excitement, and within the first thirty hours of that stage.

We can only reconcile the difference in the treatment of the same disease, of course, supported by the experience of each author, by supposing, that its constitution, and particularly the type of fever, varied with the adoption of remedies, presenting as its predominant feature, either the pure inflammatory or typhoid character, or a participation of both. Were scarlatina simply an inflammatory disease, the treatment of it would be attended with little difficulty; did it even from its ingress indicate the character of a purely typhoid fever, we might, by proper care, hope for a favourable termination; but the combination of these two phenomena, accompanied with the fact, of a specific poison being the primary cause, renders medical treatment doubtful in some cases, hopeless in others. In too many instances the physician is, as it were, placed between two

enemies. No sooner does he combat one, than, by that very act, he gives power to the other, and in this unequal contest, a peculiar gift of prophecy is not required to foresee the result. In such a disease as epidemical scarlatina, a true judgment of the peculiarities of the fever, which it may present, can only be formed by observation of the effects of remedies; but it must be ever borne in mind, that even in epidemics, in which, in a great number of instances, the train of symptoms is similar, as well as the effects of remedies, occasional cases may present themselves, exhibiting a marked difference in their characteristics, probably dependent on the constitution of the individual. I here particularly allude to the development of the inflammatory form of the disease, perhaps in one of a family, the remaining members presenting the characters of a low or typhoid fever, and *vice versâ*.

The specification of the symptoms of scarlatina would be on the present occasion a work of supererogation, and even a division of the forms, which of late years it has presented, in the order of the succession of symptoms, would far exceed the intended limits of this communication. It is not to be wondered at, that variety in the onset and progress of scarlatina should be observed when we reflect on the numerous morbid lesions which may be developed in its course, implicating indiscriminately the most important serous and mucous membranes of the body, and creating irritation or inflammation in the neighbouring glands and cellular tissue. Dr. Graves, in his admirable account of the epidemic in 1834, describes three forms which it assumed. The first characterized, not merely by sore throat and headach, but by such violent congestion of the brain as occasioned convulsions and coma on the first or second day, and generally proved fatal. The second form was ushered in by severe pyrexia, incessant vomiting, and purging, unaccompanied by epigastric or abdominal tenderness, and evidently depending on morbid action in the brain. The pulse was excessively rapid, sometimes irregular; headach was complained of, accompanied by restlessness, anxiety, and delirium;

the fauces were inflamed, a continuous efflorescence was observed over the body, and the surface of the tongue affected with exanthematous redness, becoming afterwards dry, foul, and parched; as the disease advanced, delirium increased; jactitation and subsultus were developed, insensibility followed, and in some cases convulsions preceded the fatal termination.

The third form was marked by the mildness of the symptoms in the early stage, the soreness of the throat being slight, and the eruption normal, matters appearing to go on most favourably till the eighth or ninth day, when a return of fever was noticed; the nostrils became irritated, and sore throat was complained of; the skin became hot, accompanied with great prostration of strength; a painful tumefaction commenced in the region of the parotid and sub-maxillary glands, eventually surrounding the throat like a collar. In the meantime, the nostrils poured out a viscid secretion in considerable quantity, increasing to such a degree as to render them impervious to the air in breathing; the internal fauces and mouth exhibited a similar secretion, causing difficulty in swallowing; the accompanying fever displayed the worst form of typhus, and death closed the scene, being preceded by a state of restlessness, during which it was impossible to decide whether the patient was still sensible. Accurate as is the description of these variations of disease given by Dr. Graves,* it does not include all the forms as witnessed during the late epidemic. In some cases, the predominant symptoms depended on the morbid action having extended from the throat to the epiglottis and larynx. In others, the swelling of the external fauces was one of the earliest symptoms, followed by the acrid discharge from the nose and mouth, and the patient died on the third or fourth day, without local symptoms sufficiently marked to warrant the prognosis of a rapidly fatal termination. I am indebted

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* Dr. Graves did not profess to give a detailed account of the epidemic; he confined his observations to the most remarkable forms of the disease which came under his notice.

to my friend Dr. Lees, for notes of three cases of this class, which came under his observation in the South Union Workhouse. In all, the disease commenced with the swelling of the external fauces, the tonsils and throat being but slightly affected, no symptom of œdema of the glottis existed, the children gradually fell into a state of stupor, and all died within five days from the period of attack in each case. The most accurate post mortem examination afforded no evidence to explain the cause of death in those cases. In a third, but rarer class, the disease assumed the character of scarlatina maligna, but without the efflorescence, the marked features consisting in inflammation, ulceration, and sloughing of the throat. It has been well remarked by Dr. Tweedie, that in the various forms of scarlatina, the treatment to be adopted must have reference to each individual case, as well as to the prevailing type of the fever; indeed, the general principle which ought to guide us, is to reduce local inflammation at the least possible expense of the patient's strength; but the reduction of inflammatory action, *which has approached its acmé*, does not constitute the cure of the malady. In two cases, in which my attendance was requested on the seventh day of the illness, presenting inflammation and ulceration of the fauces, with great external tumefaction of the throat. I succeeded by appropriate treatment in relieving these prominent symptoms; deglutition became easy, and the throat assumed the natural aspect; for two days, a visible improvement in the patient's general state was apparent; then came a fresh accession of fever, accompanied with a slighter degree of glandular tumefaction than previously existed, but with marked evidence of great derangement of the nervous system; one died of typhoid on the seventeenth day, the other case terminated on the twenty-first day, presenting a miserable spectacle of gangrene in different parts of the body. With reference to the treatment of scarlatina, I shall only briefly allude to two points of practice in the early stage of the complaint, namely, the use of cathartics, and the admission of cold air to the surface of the body, as I

believe that the doctrines of Sydenham and Hamilton, in relation to general fever, are frequently too heroically carried into effect, and tend to the subsequent aggravation of the disease.

Let us take the following exumple: A child is attacked with fever and sore throat; scarlatina is apprehended; the child is purged on the first day; on the second, the feverish symptoms are not alleviated, and the throat is probably worse, the body being covered with the eruption. The child is leeched, purged again, and tartar emetic solution is then administered; the little patient is first in some degree exhausted by the application of leeches; during this state the action of the purgative commences; the child is carelessly taken out of bed, not to answer the call of nature, but of medicine, and is exposed during its operation to the cold air. The tartar emetic is now given, and nausea and vomiting are added to the ante-febrile agents. Still the fever is not subdued; the pulse continues rapid, but weak; the eruption begins to disappear, the child, from being restless, becomes remarkably quiet, and a train of formidable symptoms follows. Having witnessed such results, I have adopted a different mode of practice; I place the patient, if possible, in a large and airy room, directing, after the appearance of the eruption, that the surface of the body should be carefully at all times covered by the bed-clothes, regulating their quantity by the temperature of the atmosphere, but taking care that an equal temperature is always maintained, moderating the heat and uneasiness in the skin by frequent tepid sponging, and administering aperients only sufficient to keep up the regular action of the bowels; by this mode of proceeding (being of course prepared to meet inflammation which might arise), I feel assured, that severe forms of the disease terminated favourably, which, under a more decidedly antiphlogistic treatment, would have assumed dangerous appearances. Let me not be understood as advocating the old heating and stimulant plan of treatment, nor deprecating depletion, when circumstances demand it; but such circumstances generally prove the excep-

tion, not the rule. In proof of this assertion, I may observe, that Dr. Williams, in his work on Morbid Poisons, mentions, that in 241 cases, treated at the London Foundling and Fever Hospitals by bleeding and active depletion, the deaths were one in six, while in 555 cases treated by aperients and mineral acids, the deaths were one in twenty-two. We have, however, unfortunately too well established evidence, that in some cases of this malady, all modes of treatment are unavailing; too many instances have occurred of whole families being carried off, notwithstanding the unceasing efforts of the most experienced practitioners. It is to such cases occurring in families that I wish to direct the attention of the Society.

In the consideration of this subject, the first question which suggests itself, is, what is the best mode of proceeding, relative to the remaining children in a family, where one is attacked with a malignant form of scarlatina? Are we justified in recommending their removal from home? It is strange, that although most medical authorities are against this proceeding, the feelings of the public are still prejudiced in its favour. In the year 1803, a very sensible work was published by Dr. Blackburne, exhibiting the injurious results of this practice, particularly in disseminating infection. I might bring forward some cases which came under my own observation, proving its fallacy; but the two following are quite sufficient evidence against its adoption. On the evening of Saturday the 11th of June, 1836, my friend Dr. Callan was sent for, to see a child aged eight years, who was attacked with convulsions, being the first symptom of scarlatina maligna, which ultimately proved fatal. On the following morning the other children of the family, four in number, were removed from the house. Three were sent to different parts of the city, and one to the country. Within the period from the 15th of June, to the 14th of July, all those children were attacked by the disease, and died, although every remedy which the most eminent advice could suggest was adopted. In the second instance, a

gentleman residing in the country had a family of four children; on an evening during last Summer, one of them was attacked with fever and sore throat; the following morning her father found her covered with an eruption, and dreading scarlatina, he instantly removed the other children; he sent one to a house in the neighbourhood, and two under the care of a servant to Dublin; within a week the child in the country was sent home labouring under the disease. The father allowed the remaining two children to continue in Dublin for nine weeks, and then supposing all danger of infection had passed away, they were brought home on a Wednesday. On the following Saturday evening, the malady presented itself in one of them, next day in the other, and in three days afterwards the servant became affected. The further investigation of this subject would more fully prove the truth of the position, that children have as fair a chance of escape from the disease, if left at home, all communication with the sick room being cut off, as they have by removal; in fact, some will resist the contagion, though fully exposed to its influence, while the most trifling, and perhaps unnoticed communication, will produce the malady in others; besides, it is questionable, that the first child attacked may not, during the latent period of the disease, infect individuals.

Although it is difficult to overcome popular prejudices, yet, I feel confident, that were these facts better understood, the system of removal, which affords no positive protection, and tends to the dissemination of disease, would be discontinued; and I may further add, that even in the existing feeling of the public mind, could we offer the choice, when scarlatina appears in a family, of total escape to the remaining members, or subjection to a mild form of the disease, the latter would be preferred as in a great degree securing a future immunity. But it may be asked, do we possess the means of arresting the progress of scarlatina in families, or of modifying its form? both powers have been ascribed by some German physicians to

belladonna; not having tested the value of this drug in such cases, I feel diffidence in deciding against its utility; however, the very minute doses, in which it has been administered, must render us sceptical as to its possessing this virtue, and may even lead some to agree with Dr. James Johnson, in ranking it among the fooleries of Homœopathy. Even admitting that belladonna possesses anti-scarlatinous properties, it should be administered in appropriate doses, and the continued exhibition of so powerful an agent to children, is not free from hazard. Being therefore prejudiced against its use, I adopted other means, not as prophylactic, but with the hope of modifying the character of the disease, which will be best explained by a brief narration of the following cases. In the latter end of May, I attended a child in a severe form of scarlatina anginosa, which terminated favourably; at the period of the child's convalescence, her aunt who had been the constant attendant during her illness, was one evening seized with rigors, prostration of strength, headach, and sore throat. Supposing she had caught cold in the discharge of duties as a nursetender to her niece, she bathed her feet and retired to bed at an early hour, having previously taken some purgative medicine; she passed a restless night, suffering from severe headach, nausea, and a most distressing feeling of fulness, with a burning sensation and soreness in her throat; her stomach sickened, and in the course of the night she threw off a large quantity of bilious fluid. I visited her early the next day, and found her complaining of severe headach, and great soreness of the throat; the whole face and neck presented a dark red colour, but without any efflorescence; the conjunctiva was injected, and the submaxillary glands tumid and painful to the touch; the skin was remarkably hot and dry; pulse 120. On examination, the tonsils and pharynx presented a dark-red colour, with some tumefaction, and were partly covered with a viscid mucous secretion, patches of coagulable lymph being here and there observable. The vomiting had ceased, and the bowels were

free. I may here observe that this lady was about the middle period of life, of rather a delicate constitution, and peculiarly susceptible to the influence of mercury, a circumstance which at the moment escaped my recollection. I directed twelve leeches to be applied to the throat, and ordered a pill containing two grains of calomel, and a grain and a half of James' powder, to be taken every four hours; a poultice to be applied round the throat after the removal of the leeches, and warm barley water to be used occasionally as a gargle. I visited my patient the following morning, and was agreeably surprised on entering the room, to find her smiling, when she exclaimed that I had cured her throat, but that her teeth were loose, and her gums sore; on approaching the bed, I perceived the mercurial fœtor, and examination proved that she was fully under the influence of the medicine. She stated, that the headach was considerably alleviated, and the uneasy sensation in the throat completely removed; the appearance of this part was much improved; it had lost the dark-reddish hue and the exudation of lymph was considerably diminished; the fever was also alleviated: she had taken four of the pills. I directed a rhubarb draught to be taken immediately, and during the day she got minute doses of tartar emetic solution, and a gargle containing borax was used occasionally. It is unnecessary to detail the further history of this case; from this period, matters went on favourably, and in about eight days she was convalescent, no efflorescence having appeared on the skin. On the 18th of June, I was requested to see a child about five years' old, labouring under scarlatina; on paying my visit, I found a remarkably fine boy lying in a comatose state, with an acrid discharge from the nostrils; great tumefaction of the fauces, and a partial livid eruption on the surface. I ascertained that he had been ill only three days, previous to which time he enjoyed the most perfect health. Before I saw him, the throat had been leeched, and other remedies adopted, but without the slightest effect in mitigating the disease. I had no

hesitation in pronouncing the case as hopeless; a prognosis which was verified, as the child died in the course of the night. After leaving the patient, and while passing through another room, the child's mother, who exhibited the deepest distress of mind, pointing to two other children, exclaimed, that they would be also lost, and in an imploring manner asked, could nothing be done to save them from the disease? This question influenced me to make inquiry as to the number of the family; I ascertained that it consisted of the man and his wife, and three children, including the one in scarlatina, and that they occupied two rooms. I examined the children, one a boy aged seven, the other a girl about three years' old; both appeared in excellent health, and did not exhibit the slightest trace of the scrofulous diathesis; on the contrary, they were robust, well formed, and healthy looking children. Chiefly with the object of allaying the mother's anxiety for the time, I ordered for each a powder consisting of mercury with chalk, and rhubarb. I confess, this poor woman's question humiliated me. I saw one child irretrievably lost, and two others probably on the verge of destruction, and yet, what means could I suggest to avert the impending danger? Was I to wait until the malady exhibited itself, and then probably find remedies ineffectual? These important questions engaged my attention. I was not aware of any remedy having been suggested under such circumstances, with the exception of belladonna, and in this I had no confidence, particularly as I considered it highly probable, that, from the necessary exposure to contagion, the children were, at the time, under the influence of the miasma. The extraordinary effect of rapid mercurial action, in modifying the character of the disease, as exhibited in the case of the lady already already alluded to, influenced me in concluding, that the exhibition of mercury in daily alterative doses, prior to the establishment of the febrile stage, would place the children in the most favourable position for the production of the full effect of this remedy, *at a very early period of the disease*, should the character of the inflammatory symptoms require such a proceed-

ing. From the high repute which the mineral acids possess in the treatment of scarlatina, I also determined on giving muriatic acid, having, besides, in view its tonic effect. I considered, that by cautious observation of the effects of the mercury, and by taking care that it was not given to such an extent as to produce its usual marked effects on the system, no possible injury could accrue to the child if he escaped scarlatina; while if it became developed he would not be in a more unfavourable state for the resistance of its influence. On the contrary, it might reasonably be supposed, that even if the effect of the remedies was merely the promotion of the natural functions of the alimentary canal; such a result would be more beneficial than otherwise; but another important consequence might follow, namely, the production of an altered condition of the individual's constitution, which would modify the character of the disease, it being remarkable, that the most apparently strong natural constitution, so far from offering due resistance to scarlatina, serves rather as an indication of its probable severity. My observation leads to the conclusion, that children of a delicate and even scrofulous constitution, frequently present the disease in a milder form, and certainly the most extraordinary recoveries from the greatest danger that I witnessed, occurred in individuals of this class. Influenced by these considerations, I visited the children on the following day (June 19th), and ordered a mixture containing dilute muriatic acid, syrup, mucil. of gum arabic and water, the dose being so regulated, that the eldest child took five drops of the acid three times a day, and the younger one a proportionate dose. I also directed three grains of blue pill for the boy, and half that quantity for his sister to be taken at bed-hour, and advised that they should be allowed to take their usual exercise, and that their diet should be light and nutritious.

June 20th. The children took the medicine yesterday; no visible effect was produced, they appear quite well. I ordered that each should be placed in an artificial salt water bath for five minutes previous to going to bed. The medicines to be continued.

June 21st. The boy looks paler to-day, but makes no complaint; he slept well, and took his breakfast with an appetite. On examining his tongue, the papillæ seem rather elevated, and a very slight hyperemia is observable over the internal fauces; the other child is in the same state as yesterday.

23rd. After my visit yesterday, the boy exhibited appearances of lassitude, and was chilly; he got some sleep in the early part of the night, but afterwards became hot and restless, and complained of headach and sore throat. I saw him at nine A. M. The report is, the fever is rather severe; the palate, tonsils, and uvula, red and swollen. He complains of difficulty of deglutition and of nausea; pulse 120; skin hot and dry; the submaxillary glands are slightly enlarged; tongue white and moist; bowels confined since yesterday. I ordered a powder containing a grain of calomel and a grain of James' powder, to be given every four hours, three leeches to be applied to the neck below each ear, and a gargle of barley water and honey to be used occasionally.

23rd. He vomited the first, but retained the subsequent powders; the bowels were acted on yesterday evening; he had some sleep in the night, and feels better to-day; a normal eruption is observed on the surface; the throat presents the appearance of slight superficial ulceration, but is neither so red nor swollen as yesterday; the general uneasiness is less; the pulse 110. I directed the throat to be touched by means of a camel's hair brush, with a linctus consisting of solution of chloride of lime and honey; a purgative injection to be administered, and the face, neck, chest, and extremities to be sponged twice a day with warm vinegar and water. The following mixture was taken:

℞ Aquæ Acet. Ammon. ʒij.
Syrup. Aurant. ʒij.
Liq. Antim. Tart. ʒij.
Aquæ Rosæ ʒiiiss.
M. Sumat Coch. amp. tertia quâque hora.

The further progress of this case presented no peculiarity: no bad symptoms occurred, and the child eventually recovered.

The younger child was attacked on the morning of the 23rd; the symptoms bore a resemblance to those of her brother, but in a milder degree; the treatment was consequently less energetic, leeches not being required. In neither case was it necessary to continue the calomel after the first twenty-four hours, nor was there any evidence of its having affected the system. In the consideration of the result of treatment in the foregoing cases, it may be questioned, whether they might not have proved as favourable without any preparatory treatment, it being occasionally observed, that variations in the character of the disease occur in its progress through families. While we are ignorant of the cause of such variations, it is quite idle to attempt the solution of this question. Although it is admitted, that they are occasionally observed, yet, medical authorities of great eminence are opposed to their general probability. Dr. Willan states, "that when scarlatina spread widely, it exhibited, in the different persons affected, every variety and gradation of appearance, from the slightest to the most malignant form of the disease, yet, during its diffusion through some large families and schools, he had seen it uniformly retain the series of symptoms which occurred in the first patient with nearly the same degree of fever."

Dr. Graves also observes, "that when one member of a family died, there was always much reason to fear for the others when attacked."

One of the greatest obstacles against the adoption of the course I pursued, is, the repugnance which must be felt against submitting a child in apparent good health to medical treatment; but when it is recollected, that this proceeding is only recommended, where the first case occurring in a family has presented a severe or malignant form of the disease, and that its adoption is not likely to be productive of injury, I cannot think there exists any valid objection against its application. But it

may be inquired, for what period are the remedies to be continued? I have before remarked, that the operation of the mercury should be carefully watched, and that it ought not to be continued so as to affect the mouth, or produce ptyalism; in fact, much must depend on the judgment of the practitioner, in determining on the time for commencing its administration, and the period of its continuance. On general principles I would say, that the latter should not exceed six days, supposing no perceptible influence was produced, nor had scarlatina exhibited itself, and then a longer interval might be allowed to pass between each dose, thus gaining time, and yet, not completely laying aside the medicine. An average taken from various sources leads to the conclusion, that the specific contagion of scarlatina has a latent period from four to seven days. I shall select one instance, furnished to me by a friend. A gentleman residing in this city had a family of three remarkably healthy children; on the 16th of June, 1841, one of them, a boy aged three years, was attacked with scarlatina; on the 18th the disease presented a malignant form, and he died on the 22nd. His sister, aged eleven, was seized with the malady on the 23rd, and died on the 28th; and the remaining child became ill on the 25th, and died on the 29th. Now, admitting for a moment the efficacy of any plan of preparatory treatment, it is plain, that in cases exactly similar to those, the third day of the first child's illness, when its malignancy was evident, should be the period of commencing the remedies; thus, giving in one instance, five, and in the second, seven days, for their operation previous to the febrile stage. It may be recollected, that in one of the children whom I treated, I observed, several hours before the febrile stage, an elevation of the papillæ of the tongue, and hyperemia of the fauces; such evidence was valuable, as being of recent origin, and unaccompanied by gastro-intestinal derangement. I find, in a paper published by Dr. Sims, in the Memoirs of the Medical Society of London, the following observations which bear on this point:

"The irritation of the throat will be found to commence very early, if it be minutely inspected, for though no complaint is usually made of uneasiness in the throat previous to the febrile symptoms, yet, if it be closely examined, the velum pendulum palati will be found redder than natural, and sometimes the uvula will appear to be a little inflamed, the pulse being at this time not more than slightly disturbed or flurried, rather than feverish." It is almost unnecessary to remark, that the development of such symptoms would, in a case where doubt might exist as to the approach of the disease, decide the propriety of pursuing the course of treatment.

In approaching the inquiry as to the efficacy of this mode of treatment, I feel, that in determining on this point, more extended observation is required, and being satisfied that the opportunities afforded to one individual would not suffice to test its value, I preferred bringing this communication in a crude form under the notice of the Obstetrical Society. I do not advocate the doctrine that mercury is a specific in scarlatina, for the simple reason, that I have witnessed cases in which ptyalism was established, eventually proving fatal, but it was at an advanced period of the disease, when the patients became mercurialized, and even then, a temporary improvement was produced, followed, however, by an aggravated fatal termination. I have before remarked, that one object I had in view in administering mercury in alterative doses previous to the febrile stage, was to place the patient in that position whereby, if the character of the inflammation demanded it, I could with greater probability produce a rapid mercurial effect, with the hope of *arresting the inflammatory action in its progress,* an object which, under ordinary circumstances, can scarcely be produced, if the febrile stage has existed for any lengthened period, because this state of the system bears an analogy to bad typhoid fever, in presenting the greatest difficulty of bringing the constitution under the influence of mercury; indeed, the attempt to induce mercurial action in scarlatina after the febrile stage has been fully de-

veloped, and the local inflammation has arrived at a degree of intensity, is rather injurious than beneficial. I shall not stop here to inquire whether the first link in the chain of morbid action is connected with the great nervous centres, or the mucous membrane, but I feel satisfied, that the *early arrest* of inflammation in the mucous membrane is most desirable; and we have positive evidence that such an effect can be produced by creating a sudden new impression on the part, even though the irritated or inflammatory state may arise from a specific poison; this difference being applicable to scarlatina, that mere local treatment fails, unless accompanied by remedies which produce an effect on the general constitution. At all events, apart from the advocacy of any peculiar plan of treatment, I am fully persuaded of the value of Doctor Armstrong's opinion: he says, "it should be repeated again and again, that most of the rudiments of danger in fevers are laid in the first stage of oppression, and if we can alleviate the symptoms of that stage, we thereby usually insure a most favourable issue." The investigation of the proper mode and time of administering mercury in different diseases has engaged the attention of Dr. O'Beirne and other eminent observers in this city, and is a subject full of interest.

The principle has been established, that in diseases in which mercury was previously considered injurious, an early stage exists, in which it is of the most marked utility, that stage passed, its exhibition is attended with doubtful efficacy, if not positive injury. Is this doctrine applicable to scarlatina? In concluding this communication, I feel, that, even should future experience prove the efficacy of the plan of treatment I propose, circumstances must tend to limit the field of its utility, among which may be enumerated, first, an aggravated variation of the disease occurring in a family; and secondly, the rapidity with which one child may be attacked after another; still it should be recollected that these are exceptions to the general rule, and acknowledging, as we must, that the means hitherto adopted to counteract this dreadful malady have, in too many

instances, proved unavailing, it becomes an imperative duty to endeavour to remove that opprobrium which this epidemic has affixed to the science of medicine.

ART. III.—*Observations on the separate and combined Actions of the Orbicularis Palpebrarum.* By EDWARD HOCKEN, M. D., M. R. C. S. L.

DIFFERENT observers, at different periods, in the extensive field of physiology, have taken different views regarding the action of the orbicularis palpebrarum, as also of the other muscles of the eye and its appendages: one party assert its strictly voluntary action, and again, another as loudly claim for it the title of a sphincter. The author will endeavour to show that its single and combined actions are peculiar, and that it may or may not be linked by unity of effort with other muscles or sets of muscles, according to the condition of the lids and the state of the feelings or emotions. Every muscle in the body possesses its proper antagonist, which it either controls, modifies, or limits in its sphere and manner of action; in the instance before us, the levator palpebræ holds this relation to the orbicularis. These two muscles possess an alternate and peculiar action: the relaxation of one is invariably, during health, followed by the contraction of the other; which seems to be voluntary, or nearly so, as we are always conscious of the act. I will now mention the exceptions. There is a medium at which the lids are uninfluenced by other muscles, in which they hold a relation to each other occasioned by the mere influence of gravity; in this state, the upper lids fall over the globe in its upper two-thirds, covering the front of the cornea, and hiding the iris, so that nothing but the conjunctiva, and subjacent tunica albuginea, "the white of the eye," are visible, constituting the lower third. The opportunities of seeing this absence of contraction in either muscle are comparatively few; some people during sleep thus expose their eyes, but this is rare. When, however, the

influence of the brain is removed by disease or death, we learn the fact I am now endeavouring to prove. Those who have carefully observed the dead body, cannot fail to have remarked the relation which the upper and the lower lids hold to one another in and after death, whilst the eyeball is slightly rotated upwards and outwards; and again, we see the same condition in some severe cases of concussion or compression; or where from cold, or other causes, the orbicularis palpebrarum is paralyzed, and the patient is rendered incapable of closing the eye.

As it is clear, that the eyelids only assume this partly closed condition by mere unaided gravity, it will be obvious that something more is required to close these organs completely, and we find, in truth, that such is the case. But here the questions arise—how is this ulterior action effected? and by what powers are the lids retained closed, during sleep, and under other circumstances? The closure of the lid is a voluntary act, preceded by relaxation of the levator palpebræ, aud attended by a corresponding contraction of the inferior oblique muscle of the orbit; hence as we close the eyelid, so in proportion is the eyeball rotated obliquely upwards, and inwards, and finally upwards and outwards. If the fingers be gently pressed on the globe whilst the lid is being closed, and after it is closed firmly, we may feel those movements, and convince ourselves of their reality; but a more convincing proof is found where the globe is affected with staphyloma, under which condition the motions of the eyeball can be followed by the eye of the observer, and the touch clearly detects the oblique position of the cornea, directed obliquely upwards and outwards, when the lids are fully closed. Whilst the lids are closed the eyeball continues to hold the same relation, as the observation of a good case of staphyloma clearly shows, and the sleeping eye, where the lids are quickly separated, shows the same fact: taking the eye of a sleeping infant as an illustration, if we gently but quickly separate the eyelids, we invariably find the eyeball thus obliquely rotated. The advantage of this combined action in

winking (suddenly contracting the orbicularis palpebrarum and then suddenly relaxing it) is quite obvious, to wipe the front of the globe, and uniformly diffuse the moisture destined to supply that organ ; but the advantage of retaining the globe in its oblique and protected situation, during closure of the lid, is quite as useful although not at first sight so apparent, it is to insure the complete exclusion of light during sleep, &c., and thus greatly to aid the operation of the imperfectly translucent curtain—the lid.

The closure of the eyelids is voluntary, since we are always conscious of the act, and if we attend to our sensations during its closure, we may become conscious of a preparatory relaxation of the levator, and a gradual contraction of the orbicularis, whilst the eyeball itself undergoes those movements which contraction of the inferior oblique originates. The power by which the eyelids are maintained closed, after a voluntary effort has closed them, is exactly the same in nature as that by which the eyeball is maintained in its raised and everted position, after it has been rotated upwards and outwards by the inferior oblique. Little or no force seems to be exerted in maintaining this position of the globe and lids, little, in fact, beyond mere tenacity ; since, where the lids are not maintained in contact by a voluntary effort, or by involuntary spasm, as during quiet sleep, little or no force is required to raise and separate them, the eyeball still maintaining its direction. When the levator palpebræ is voluntarily contracted, the orbicularis undergoes relaxation, and the lid is raised, whilst the oblique is also relaxed, and the eyeball assumes its straight position.

The orbicularis and levator show their antagonism of action as muscles of expression ; the raised lid, the protruded eye, the partially closed lids, and contracted brow, are each of them intimately connected in action with other muscles, and sets of muscles which manifest similar passions, feelings or emotions. But it is not my intention to enter on these points at present, and in this place.

I have stated, that during quiet sleep, little comparative force is exerted in maintaining the lids in a state of apposition, for we find that, to a certain extent, they can be separated without any apparent opposition, until the impression on the trifacial induces a reflex action through the seventh, and the consequent involuntary closure of the orbicularis. It is evident, that this is a condition for maintaining the organ in a state of tranquillity, and protecting it from the influence of light, co-operating with the position of the globe in this particular.

When the whole muscle is put in action to close the lid, it is a voluntary effort, and not the mere involuntary contraction of a sphincter; whilst, however, the levator remains relaxed, and the eyelids closed, its continuous effort, if any such exists, is evidently a sphincter-like condition, although it differs not from the continuous and combined efforts of the inferior oblique, which, although continuous and involuntary, no one would call that of a sphincter. But there are a few fibres of this muscle spread over the front of the tarsal cartilages, to which the title of "ciliaris" is applied, and which are capable of an independent action. We see them used, or, in fact, only one, to give a slight but meaning movement to the tarsus, a wink of doubt or slyness, or on the approach of any foreign body near the eye, which may or may not extend so as to affect the other portions of the muscle.

Painful impressions on the retina, as the influence of powerful light, occasions a spasmodic closure of the orbicularis, especially when the retina is morbidly irritable, as in strumous ophthalmia, retinitis or hysterical amaurosis: impressions on the conjunctiva produce similar effects; the introduction of small bodies under the lids is followed, as is too well known, by most painful photophobia and blepharospasmus, and the propagation of irritation to the schneiderian membrane, producing sneezing in strumous ophthalmia, shows that the conjunctiva takes no important part in occasioning the excessive intolerance of light, and spasmodic closure of the lids.

When from any cause the retina is insensible, we learn how much is dependent on the reflex action alone; for, under these circumstances, the finger may approach the organ to within the smallest possible distance, without actual contact, and still occasion no movement in the lids at all; but if now the lid be touched, or the cilia disturbed, then the lids are immediately closed, distinctly showing the excito-motory function of this muscle. When, however, the retina retains its sensibility, the approach of the finger, as I have before remarked, occasions a sudden contraction and relaxation of the orbicularis palpebrarum, which is a valuable test in feigned blindness, and should by no means be overlooked among the diagnostic points.

This muscle is extremely subject to involuntary spasmodic action, and in individuals whose bealths are deranged, or who suffer from excitability of the general nervous system, nothing is more common than a troublesome and frequent winking of the eyelids of one or both eyes. But we see a still more unpleasant and annoying affection which occasionally originates from deranged digestion, or some morbid condition of the primæ viæ, consisting in paroxysms of constant twitching and partial contractions, which constitutes what is termed "morbid metitation," an affection which, in general, readily yields to an active aperient.

The orbicularis palpebrarum is employed conjointly with the two orbital obliqui, and with the four recti muscles, among other changes effected to adopt the organs of vision for near and distant sight, and for the scrutiny of large, and also very minute objects. When the eyes are adapted for near-sight, being elongated by the conjoint action of the obliqui, besides other changes, the eyelids are partially closed, and this also is one of the actions employed when near-sighted persons endeavour to discern distant objects; with the recti conjointly it is employed, when the globe is retracted and flattened by their operation, and otherwise fitted for use on distant bodies; here, when the sight is strained to discern something ill-defined, the

brows are contracted, and the lids partially closed. These actions are combined moreover with another muscle, the "corrugator supercilii," by which the brows are contracted, being drawn downwards and inwards towards the middle line. Besides the combined contractions of the orbicularis with the inferior oblique, for the purpose of diffusing moisture and wiping the eye; and again, for thoroughly protecting the organ from light, they are employed when superabundant moisture exists, as in weeping, to bring the edges of the lids together to form that triangular canal, by which the tears are conveyed to the puncta lachrymalia, and thence through the lachrymal sac to the nose; and in this operation the orbicularis cooperates with the tensor tarsi, which stretches over and compresses the sac. A little observation will readily convince us that the orbicularis and the levator palpebræ possess each of them a combined action, the first with the rectus inferior, and the second with the rectus superior: if we depress our eyes by the contraction of the inferior recti, or if we observe this action in others, we can in the first place feel, and in the second see, that in proportion as the eyeball is rotated downwards, so is the lid proportionately lowered by the contraction of the orbicularis palpebrarum, and that in like manner as the eyeball is rotated upwards by the contraction of the rectus superior, so is the lid elevated by the levator palpebræ.

Sphincters maintain a state of permanent and involuntary contraction* under all ordinary circumstances; but when the functions of other parts of the economy require the relaxation of those apertures which they are destined to close, the efforts of expulsion originated under these circumstances are always attended by relaxation of the appropriate sphincter, which also occurs without any knowledge on the part of the individual, or any voluntary action whatever on the part of the muscles; and

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* Hunter remarks, that sphincter muscles remain always above three parts contracted.—Works, vol. iii. p. 154.

again, as soon as the effort of expulsion ceases, then the sphincter resumes its contraction, quite without any volition on the part of the person concerned. The efforts for closing the aperture are always appreciable, and afford considerable resistance to their dilatation, under all other circumstances than those mentioned, with the exception of the voluntary power, both of contraction and relaxation, which we possess over them. Hunter remarks, that they should be called muscles, with power of occasional relaxation. In these particulars, the orbicularis palpebrarum presents many striking differences from ordinary sphincters, relaxation being the ordinary, and contraction the occasional condition of this muscle; besides, its closure is not involuntary, and when closed, little, if any active power of contraction is exerted to maintain the eyelids in apposition, although the excito-motory function presides over this aperture, as it does over the other orifices of the body. It also always cooperates with another muscle, during closure of the lids, the inferior oblique, in protecting the eye from the influence of light, a muscle which seems to possess a function peculiar, but similar in this respect to the orbicularis; whilst it (the orbicularis) also possesses a distinct antagonist similar to the strictly voluntary muscles; although it is fair to consider, that as the sphincters placed on the middle line of the body, were originally composed of two separate halves, that each half is the proper antagonist to its fellow portion, whilst other muscles antagonize them in function; thus the muscular fibres of the rectum, antagonize the sphincter ani, the passive condition of one corresponding to the active contraction of the other, as is the case in the instance of the orbicularis palpebrarum and the levator palpebræ.

Mr. Hunter's observations tend to confirm my opinions of the peculiar actions of the orbicularis. He remarks,* that although many circular muscles may not have the mixed contraction of sphincters, as the orbicularis palpebrarum, yet that

* Works by Palmer, vol. iii. p. 147.

muscle has a disposition to contract peculiar to itself. Its relaxation is to be reckoned of the active kind, which may be called the relaxation of watchfulness; and it is, when tired of this species of action, that it contracts, which, on the contrary, may be called the contraction of sleep; or it may be considered as an elongator muscle to the levator palpebræ, with a disposition to remain relaxed while that muscle is contracted, but contracting when the elevator is tired. The natural contraction of the orbicularis muscle is involuntary, the relaxation, both natural and occasional, is involuntary, but it has likewise a voluntary contraction and relaxation, which can be made to exceed the involuntary, resembling what is inherent in all the sphincters. To the remarks of John Hunter, Mr. Palmer, in his edition, has appended a note, stating that he sees no reason for supposing that the orbicularis is different from the other sphincters, or that it has a disposition to contract peculiar to itself: it is only peculiar in being antagonized by the levator palpebrarum, which is a common voluntary muscle. On this point I have already fully expressed my opinion, and I trust proved the peculiar action it certainly possesses, both as a simple and combined effort, agreeing with John Hunter as to its peculiar disposition, although not in the details of its peculiarity.

A good article on this subject will be found in the Dublin Medical Journal, by Mr. Gabriel Stokes,* who clearly proves that the closure of the eyelids is not a merely passive condition from relaxation of the levator palpebræ, as taught by Bichat, but that muscular agency is employed in its accomplishment. An interesting case is there narrated of paralysis of the portio dura occasioning lagopthalmas, in which, as in similar cases, by no means so very uncommon, the upper eyelid assumes that position in which the force of gravity, unaided by muscular effort, would place it, and which I have already remarked. With Sir

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* Vol. xviii. p. 70, No. for Sept. 1840.

C. Bell he remarks, that during sleep the eyeball is turned up, whilst the affected eye remains open; in fact, the lower third of the eyeball is exposed in these cases by the dropping of the upper lid over the two upper thirds, and the white of the eye alone shows from the more or less complete action of the inferior oblique. Mr. Stokes considers the muscle as a true sphincter for the reasons that it presents all the anatomical and physiological characters peculiar to such muscles, viz., a mixed function; the voluntary power being employed during a state of wakefulness, the involuntary during sleep; regarding the orbicular and palpebral portions as but one muscle possessed of a similar mixed function. In a former part of this paper, I have given my own opinions on this subject, and my reasons for adopting them, and therefore need only remark that, if correct, my views tend to prove that there is much truth and some inaccuracy in these statements.

ART. IV.—*Observations on Adhesions and Strictures in the Vagina, existing during Pregnancy and Labour.* By RICHARD DOHERTY, M. D., Honorary Member and Secretary of the Dublin Obstetrical Society, &c.

[Read before that Society 7th December, 1841.]

MR. PRESIDENT AND GENTLEMEN,—The attention of this Society has been most usefully directed, on two or three occasions, to the consideration of the difficulties which attend labour, complicated with certain encroachments on the space through which the fœtus must pass during delivery. To Dr. Beatty we are indebted for many excellent practical remarks on a case, wherein the obstruction was caused by a fibrous growth, which, springing from the posterior wall of the uterus, descended into the cul de sac of the peritonæum, and projected into the vagina; and we are under obligations to Dr. Dwyer for an able elucidation of an equally interesting example of that more common complication, morbid enlargement of the ovary. It is my in-

tention on the present occasion, to submit, with your permission, a few observations, founded on some cases I witnessed, during the period of my connexion with the Dublin Lying-in Hospital, of another species of diminution of the parturient passage; namely, that arising from adhesions or strictures in the vaginal canal. And as this subject has been already treated of, as a malady of the unimpregnated, in a lucid and instructive paper, read before this Society by Dr. Kennedy,* the remarks, I shall make, shall have reference to it, merely as a complication of pregnancy and labour.

The obstruction I allude to, generally speaking, is the result of pressure or injury suffered by the vagina in a former labour; and, of course, its degree varies in different individuals; for the most part according to the depth, and intensity of the inflammation thereby produced. Thus, if proper attention be not paid to the state of the passage after tedious or difficult labours, its walls may become glued together, either at one point, or throughout their whole length, or bridles of lymph may be found passing from one side to the other across the canal, or strictures encroaching on its calibre to a greater or less extent. In another class of cases, there may be merely a slight puckering from the formation of a cicatrix, or where much superficial sloughing has taken place, the parietes may present throughout a hardened rugose surface. In the formation of these cicatrices and strictures, the process may not inaptly be compared to that which occurs during the healing of a burn, and they resemble the contractions arising from that cause, in another material point, their tendency to recur, even after being divided. The preparation I now, by permission of the Master of the Lying-in Hospital, exhibit, is an extraordinary instance of the extent to which the process of slough may be carried. Here is a slough of the entire inner surface of a vagina. From the vulva to

* This paper has been published in the 16th vol. of this Journal. In it, the subject of prevention has received full consideration, as its importance demanded.

the os uteri not a point escaped, and to prove how care and attention can prevent ill consequences even in such a case as this, I would remark, that the patient who suffered this loss of substance, left the hospital with the passage almost as capacious as before the delivery. This preparation may be considered unique, and is that alluded to by Burns in a late edition of his work. Besides these conditions, where the slough has gone to a greater depth, we may have fistulous communications into the adjacent cavities, either into the bladder on the one hand, or into the rectum on the other. These mal-consequences, I have said, are mostly the result of a tedious or difficult labour; but it should be remembered that, independently of this cause, or of original malformation (into which it is not my intention to enter), a narrowed or even impervious state of the passage may arise from other sources of irritation; for instance, erysipelatous inflammation occurring during childhood, or from variolous pustules on the mucous membrane.

Many cases are recorded which prove that, even the smallest communication with the uterus may be sufficient to admit of conception taking place; but if the inflammation, however arising, have gone so far as to produce a perfect occlusion, of course no subsequent impregnation can be effected. When, therefore, we meet with this complication of labour, we are bound to consider, that pregnancy had existed before the vagina had completely closed. I have indeed seen individuals, in whom, perhaps, it might occur, although the canal itself terminated in a cul de sac. In the cases I allude to, although there was no *direct* communication between the vagina and the uterus, an orifice *below* the occlusion admitted the finger into the cavity of the bladder, into which the os uteri could be felt to project, owing to a destruction of the vesico-vaginal septum, also *above* the adhesion. By this circuitous route, possibly impregnation might be effected; but I should consider conception, with such a state of parts, a very unlikely occurrence indeed. It is seldom, therefore, we are called on to treat cases of labour,

wherein the walls of the vagina have become altogether adherent. The most usual complication is, a falciform band encroaching on its area, or one or more rings of cartilaginous hardness, either traversing its whole circumference, or only contracting a segment of it; and with these there is too frequently found a vesical fistula. In such cases, if the latter lesion do not exist, the woman may be unconscious that any ill effects have followed her former delivery; and, particularly if the stricture be situated at a distance from the vulva, she may not only conceive, but even go to her full time, without being aware that anything is wrong with her. There may, indeed, be disagreeable sensations after the middle period of gestation, in consequence probably of the vagina having then acquired its utmost amount of elongation; but as this uneasiness does not amount to pain, it is set down as amongst the category usually attendant on pregnancy; and it is only when the accoucheur makes an examination to ascertain how far labour has progressed, he becomes acquainted with the condition of the passage. The question then arises, what line of practice must he adopt?

This must obviously depend very much on the exact state of the parts, and on the more or less imminent nature of the dangers to be apprehended. If the injury done merely consist in the formation of a few cicatrices, I believe the less we do by far the better for our patient. As the delivery most probably will be tedious and painful, our attention should be directed to observing the rules laid down for the treatment of such labours, and to the adoption of means calculated to produce a relaxation of the tissues. To effect the latter object, if much febrile action exist, the lancet will be found advantageous, and the warm bath may be resorted to with good effect. But, in my mind, there is no remedy so beneficial in this respect, whether in the case now under consideration, or in general rigidity of the soft parts, as the tartar emetic given in nauseating doses. It in most instances entirely supersedes the necessity of bleeding, which I think a matter of much importance in labours likely to

be prolonged and fatiguing, while it equally inclines the tissues to become pliable. Many cases illustrative of its action in this respect, I could bring forward, but the instance which made most impression on my mind was that of a middle aged woman, who was admitted some time ago into hospital, in labour of her first child. On examination, the finger could be passed up the vagina only with the greatest difficulty, and when introduced, felt as if it were surrounded by a cylinder of iron; so thick and hard were the walls of the canal and perinæum. They seemed in truth to possess not the slightest elasticity, so much so indeed that I was some time before I could persuade myself it was not one of those hard, encysted tumours, surrounding the rectum, that my finger came in contact with; and yet all this rigidity disappeared in less than six hours, under the use of tartar emetic, and the child was expelled without any difficulty. This case certainly surprised me not a little at the time, and served to teach me, what I have since become fully convinced of, that tartarized antimony is an exceedingly useful remedy in the treatment of disordered conditions of parturition, and may be employed where we dare not use the lancet. In this case her pulse was so feeble that abstraction of blood was altogether inadmissible.*

But to return to the treatment of cicatrices in the vagina during labour. I am quite borne out by Denman's experience in saying, that these minor affections scarcely ever demand any active interference. "Amidst a great number of cicatrices in the vagina," observes that author, "I have not met with one example in which they were able to withstand the pressure of the head of the child, if the pains were of the customary strength. The labours have indeed been prolonged, but they have terminated favourably."

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* The use of tartar emetic in labour, complicated with rigidity of the soft parts, which was, we believe, first recommended in these particular instances by Dr. Kennedy, must be considered one of the most important improvements in modern practice.

This observation applies with equal force to bands crossing the vagina, whose resistance is but slight, and to strictures, which diminish only in a small degree the width of the passage. But where an obstacle of greater importance presents itself, it becomes necessary to consider whether we cannot judiciously interpose to obtain for the fœtus a freer exit.

Where a perfect occlusion exists, there can be no question; we are not justified in leaving the case to nature. Under such circumstances it is utterly impossible the contents of the womb can be safely expelled without our reopening the canal, and making a passage for the fœtus in the proper direction. To do this is a difficult and perilous undertaking. Obliged to cut at a considerable depth from the surface with merely our sense of touch to rely on for information; having so close to us the bladder at one side, the rectum on the other, and the peritoneal cavity above; it is an operation of great delicacy, and requires the utmost caution to avoid doing injury to any of the important parts around; it, is essential, therefore, to proceed slowly, and with due deliberation. The best instrument, I think, we can employ, is a straight bistoury, covered throughout with sticking plaster, except over a small portion of its extent. It can be safely introduced by carrying its flat surface along the finger, passed into the vagina. In making our incisions we should never allow them to go beyond the sixteenth of an inch in depth at once, and we should frequently withdraw the knife and make a careful examination of the progress we have made. A pair of flat wooden spatulas, introduced one on either side, will, by keeping the parts asunder, facilitate the operation. It will also be found a useful precaution to pass the finger of the left hand up the rectum, in order that we may judge how far our incisions may be carried without endangering that intestine; and it is a matter of prudence to avoid, as much as possible, cutting towards the bladder, lest from its close proximity and intimate connexion with the vagina we open into its cavity. Having thus, step by step, and with the utmost circumspection,

separated the adhesions as far as we think prudent, we should wait until the opening has had an opportunity of dilating under the pressure of the presenting part, when, if the head be still prevented from descending we may endeavour, in the same cautious manner, to enlarge the canal a little more.

The question next arises, how far is this proceeding necessary, where the obstacle to delivery amounts only to constrictions of the tube? To determine this point we must consider what is the risk to which the woman is subjected? The danger to be apprehended from strictures existing in the vagina, at the period of labour, arises not merely from the diminished space that remains for the transmission of the fœtus, but also from the changes inflammation has wrought on the adjacent structures. It is very seldom, even where a single and prominent band encircles the canal, that that is the only mischief has been done, for generally speaking, we have more or less puckering of the parietes, and not unfrequently, as I have already noticed, communications with the adjoining viscera. The consequence of these changes is, that the canal is less able to bear a forcible dilatation, and if the narrowed portion be permitted to delay the fœtal head too long, a rupture of the vagina above it is very liable to occur, even if no breach of surface already exist. But if even a small opening into an adjacent cavity be already formed, such opening is very likely to be increased into a rent, which throws both chambers into one, forming one of the most lamentable calamities can befal a woman.

To avoid these ill consequences then, the plan to be adopted is, to remove the obstacle as far as possible, by nicking the band in two or three places. The same care, and the same precautions will be necessary as in opening an occluded vagina, namely, directing our incisions, which should never exceed the sixteenth part of an inch in depth, laterally or backwards, rather than forwards, and in doing so, keeping the finger of the left hand in the rectum as a guide. A suggestion has been thrown out by that distinguished author, Dr. Rigby, that the

stricture should be divided *during* a pain, when the patient will most probably be unconscious of the act. In this practice, however, as a general rule, I should be afraid to acquiesce, as few patients can be maintained sufficiently quiet at such a time, to permit so delicate an operation to be performed with the requisite caution. It would appear to me, too, that much danger would exist, of our incision being suddenly enlarged, far beyond what we intended, under the forcible action of the uterus, and not improbably some injury done to the child, by the presenting part being pressed against the cutting instrument. I should rather, therefore, recommend, that an interval between the pains be chosen. But are we justified in resorting at once to this measure, as we ascertain this state of the vagina? Certainly not. We should by all means permit the relaxation of the tissues so conspicuous at this period, to do its utmost to remedy the defect soon before we think of resorting to any artificial assistance. We should allow the pressure of the distended membranes, or the presenting part to dilate the stricture, as far as prudence will dictate, being most particular, however, not to delay the operation too long, especially if the presentation rest altogether above the band, or the pains be powerful. While I deprecate the rashness of operating without a well marked necessity, I would at the same time beg to dwell on the fatal consequences which may ensue from postponing the use of the knife, beyond the moment at which it becomes necessary. Every additional instant then adds to the risk of laceration, and of course increases the chance of a lamentable termination to both mother and child; a fact which was forcibly impressed upon me by a case, wherein the attendant, while sitting at the bedside with the scalpel in his hand, delayed employing it, in order to afford another practitioner, who was present, an opportunity of examining the part, meanwhile a strong pain suddenly came on, and the vagina was extensively torn.

By adopting the foregoing precautions, the result of our case will, generally speaking, be successful. But unfortunately,

notwithstanding our best directed efforts, rupture will sometimes occur, as in the following instance:

Susan M'Keon, æt. 26, was admitted into hospital on the 20th August, 1839, at four P. M. She stated she had already had one child, which was still-born, about twelve months before, after which she was for a long time very sore, and had a tedious convalescence. Labour did not set in until the morning of the 21st; and at the usual ten o'clock visit by the Master, the os uteri was found dilated, and the waters discharged, the face of the child presenting with the chin turned towards the right synchondrosis, and already engaged in the brim of the pelvis. A thick band surrounded the upper part of the vagina, and materially diminished its calibre in that situation; so much so, that the finger introduced could only touch a portion of the left cheek, about an inch and half in diameter. This band Dr. Kennedy nicked in two or three places, principally in a posterior direction. The pains continuing of natural strength and frequency, the face gradually descended, and as it progressed, the remainder of the band appeared to relax, and every hope was entertained of a fortunate issue, till about two o'clock, P. M., when she suddenly complained of a crampy feel in the abdomen, particularly towards the left iliac region, a feeling which prevented full inspiration. She had some hæmorrhage from the vagina, vomiting of bilious fluid, and at the same time her pulse became rapid and small, and her countenance expressive of anguish. At this period the face of the child was engaged in the band which was yielding, and would probably have offered little opposition, if the presentation had been natural.

It being then evident that rupture had taken place, and the child being dead, Dr. Kennedy proceeded to perforate, but the head receding, when touched by the instrument, he introduced his hand. He found an extensive rent in the anterior part of the uterus, through which the child had

escaped into the abdomen. He turned it there, and withdrew it without difficulty. Having then reduced the intestines which protruded through the laceration, he removed the placenta. During the operation she lost a good deal of blood, and her pulse failing, burned brandy was given her, and afterwards an opiate, which, however, she vomited. After the removal of the after-birth, the uterus contracted well, and all hæmorrhage ceased; her pulse soon regained some strength, but remained very rapid, and regurgitation of yellow fluid from the stomach continued till five o'clock, when the opiate was repeated. It then ceased, and mercurial treatment was immediately commenced. About six o'clock she began to complain of intense pain in the abdomen, and at eight the belly was throughout tender to the touch, and tympanitic. During the subsequent night she was in great pain, with constant retching of yellowish fluid. On the morning of the 23rd, the abdomen was exquisitely tender, tense as a drum, and almost as large as before delivery. Pulse rapid and feeble; countenance sunken; she lay powerless on her back, passing her fæces under her till eleven o'clock, just forty-five hours after the occurrence of rupture, when she expired.

Post mortem examination revealed extensive marks of the most intense peritonitis. The posterior part of the abdomen and the pelvis, were filled with bloody serum, mixed with pus. The omentum and intestines were highly inflamed and glued to one another, and the uterus, which was very vascular, both anteriorly and posteriorly, adhered to the parietes of the abdomen by lymph, evidently of recent formation. At this place there was a gangrenous spot on the peritoneum. The vagina was torn from the uterus at its junction with it. The rent commenced immediately around the os, and extended from below upwards and to the right, thus forming a flap of the substance of the womb in that situation. For some distance around the laceration, a dark gangrenous appearance presented itself. The incisions which were made in the band, were of

moderate extent, and did not communicate with the breach of substance I have mentioned.

There is one point more connected with the treatment of these cases *during labour* I would notice, namely, how far is instrumental delivery called for? and upon this subject I should say, that in very few such instances can we resort to the forceps or lever. The space through which the child has to pass is already so small, as in almost every instance to preclude the employment of either of these instruments. In fact, where either can be applied, the case, if left to itself, will most probably go on favourably. It is otherwise, however, with respect to the crotchet, for this must sometimes be employed when after we have done as much as we dare to open the canal, the passage still remains too small to permit the fœtus to escape. In resorting to its use, much judgment and deliberation are necessary, and we should never do so, until nature has had full opportunity of doing her best to overcome the obstacle, and until it is obvious her efforts cannot be successful.

We have now considered what is to be done, provided the practitioner has not become aware of the existence of strictures in the vagina, previous to the commencement of labour; we have yet to enter on the interesting inquiry, whether any remedial measures should be adopted if he become acquainted with the state of the canal at an earlier period, namely, during the progress of gestation.

Upon this subject Ingleby makes the following observation: "If the stricture is not obviously calculated to obstruct delivery, and that most seriously I would rather wait and employ the bougie in the interim, since antecedent to the relaxing influences of labour, it is not possible to predict the necessary extent of incision, nor indeed whether any will be required."*

With this remark I perfectly coincide, for, in the first place,

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* Facts and Cases, page 114.

operations on these parts are not free from risk. I have myself seen most violent peritonitis follow the division of vaginal strictures, in the unimpregnated, where every care was taken to do no more than was absolutely necessary. Nay, even the simple matter of dividing an imperforate hymen has frequently given rise to alarming symptoms. "The inflammation on these occasions," observes Ramsbotham, "seems to be as severe as puerperal peritonitis itself and to bear much of the same character." If, too, we resort to the operation during pregnancy, I should fear very much that abortion would ensue. There is little doubt, that in many instances the shock which the patient would receive from being obliged to submit to the knife, together with the local irritation excited, would be quite sufficient to produce this disagreeable consequence. Secondly, the contraction, however skilfully divided, will very probably recur, notwithstanding all the precautions we may adopt to prevent it. I very well remember, among others, the case of a woman named Fitzsimons, at that time unimpregnated, who was admitted into the ward of the Lying-in-Hospital set apart for diseases of females, with the vagina almost completely closed, from the results of a former labour, in which she had been delivered with the forceps. A small canal anteriorly leading up to the os uteri, about the size of a goose-quill, alone remained. Dr. Kennedy opened the vagina with the knife, and finding the os uteri occluded, punctured it also. From that period it became my duty, under his superintendence, to pass a candle daily, and take care the parts did not again adhere; and I well recollect the difficulty there was in preserving any degree of dilatation. Several times the vagina was so enlarged as to permit a mould two to be passed with little difficulty, when on the candle being permitted to slip out, or neglected for a day, it contracted so much, that a mould six should be pared down before it could enter the stricture. This tendency to recontract then would lead me to expect little benefit (independently of the risks which attend it) from dividing the

bands, till the process of parturition is proceeding. All we can do, I think, is, by the occasional use of a bougie, or candle, prevent as far as possible any further diminution, or by the employment of sponge tents, gradually increased in size, endeavour to produce some dilatation. This latter measure is found very efficacious in cases of congenital narrowness of the vagina. But if the canal be much altered in its dimensions, there is still another important point of practice to be decided, namely, can we, by bringing on parturition, assoon as the fœtus has arrived at a sufficient development to be capable of surviving its birth,—can we, in other words, by the induction of premature labour, give the child a greater chance of its life, and diminish the mother's danger? This, is a matter of serious import, and deserves an extended consideration. It is one which became a subject of grave deliberation in a case I witnessed some time ago, in which you yourself, Sir,* were engaged, and which I shall detail before stating the arguments that may be brought forward in favour of and against the operation.

Mary M'Gahan, æt. 22, an unmarried woman, was admitted into the ward for diseases of females on the 26th September, 1839, complaining of incontinence of urine. She stated she had a tedious labour about twelve months before, and brought forth a dead child, after which she was confined to bed for a month, and since her delivery had never been able to keep her water. On examination the vagina was found contracted. On attempting to introduce the finger into the passage, it was arrested at the distance of an inch and half from the external orifice by a firm membranous expansion, which projected into the canal, and encroached on its calibre so much, that into an orifice which still remained in the centre, the point of the finger could only be insinuated. The os uteri could not be felt, and it was apparent that above the band, a free communication had been formed with the bladder. She stated she had not menstruated

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* Dr. Collins presided at the Dublin Obstetrical Society on that evening.

since her delivery. On placing the hand on the abdomen, a tumour was detected, extending from the pubes nearly half way to the umbilicus. The question then arose, what was the nature of this tumour? was it an enlargement of the uterus from an accumulation of catamenial fluid, was it a solid morbid growth, or did it depend on conception having again occurred? The woman herself, on being questioned, strenuously asserted the impossibility of her being pregnant; but the stethoscope soon solved the doubt, by revealing the existence of both a placental souffle, and a fœtal heart. On being assured she was pregnant, she then confessed she might possibly be four months gone with child.

This then was a case of no ordinary difficulty. Not only was the vagina narrowed and altered in its texture, but an opening into the bladder, probably of considerable extent, existed, and there was every reason to believe, both from her external form, and the fact of her child having been still-born, that a considerable defect existed in her pelvis. All these complications suggested to Dr. Kennedy's mind, whether it might not be right to afford her the benefit of a premature delivery. To determine this question, a meeting of the distinguished medical officers connected with the Institution was called. At this consultation, Dr. Kennedy, Dr. Collins, and Mr. Colles, the Surgeon to the Hospital, attended, when was canvassed the propriety of adopting that measure, as soon as the proper period should have arrived. The conclusion these gentlemen came to was, that it was better to allow her to go to her full time. She was accordingly discharged, with directions to return when she felt her labour approaching.

On the 3rd of February in the subsequent year she was re-admitted, being then, as well as could be ascertained, at the termination of her ninth month. At nine o'clock on the evening of that day, the report is as follows: "Pains occur occasionally. Through the small orifice of the vagina, nothing can be satisfactorily ascertained; but the presenting part would seem

to be rather soft for a head, and not so round as a breech; fœtal heart inaudible."

Next morning, February 4th, I noted that she had had frequent pains through the night; vagina not more relaxed; pulse becoming frequent. At ten o'clock Dr. Collins, and Dr. Dwyer, who was then acting as *locum tenens* during Dr. Kennedy's absence, could not satisfy themselves of the nature of the presentation through the vaginal opening; but on making an examination *per rectum*, they were decidedly of opinion, they felt a shoulder at the brim of the pelvis. The os uteri was then probably dilated, and the waters discharged. Here then was an aggravation of difficulties, in consequence of which, at two P. M., a consultation was held between Mr. Colles, and Drs. Labatt, Collins, and Dwyer, when it was resolved to proceed at once to the division of the stricture. The operation was performed by Mr. Colles. According as he advanced with his incisions, it became evident that the constriction did not depend upon the presence of a single band alone, but in fact, the walls of the vagina from that point, except immediately in the median line, were completely adherent up to the very os.

As soon as the finger could reach the mouth of the womb, it was ascertained that it was the left shoulder which presented, and that that part was firmly wedged into the brim of the pelvis. As the waters had already escaped, and the uterus was strongly contracted on the child, it was determined that evisceration should be resorted to. Attempts were made to reach the chest with the perforator, but as this was found impossible in the position the child was then placed in, it was considered best to draw down the arm by means of the blunt hook. This part of the process, with great difficulty, Dr. Labatt at length accomplished. Pains then increased, and the shoulder was pushed lower down into the pelvis. Dr. Dwyer was then able to insinuate the perforator into the armpit, and succeeded in emptying the thorax and abdomen. Two hours, at least, were required to complete this step of the opera-

tion. An effort was then made to bring away the fœtus doubled, by hooking the crotchet on the lower part of the spine; but after continuing this attempt, for at least an hour, it was found impracticable, apparently from a narrowed condition of the antero-posterior diameter of the brim of the pelvis. Presently it was observed that the upper part of the child was descending, urged forward by the uterine action. Taking advantage then of this process, the extractive force was applied to the upper part of the body, by which means the shoulder was first drawn beyond the external part, the other arm then extracted, when the remainder of the fœtus immediately followed. The head of the child on expulsion, was found to have become quite flat, and the brain extruded through the sutures, by the severe pressure it had experienced during the pains. Meanwhile the woman had become much exhausted, her pulse weak, and it was necessary to supply her liberally with brandy. In fifteen minutes a little hæmorrhage occurred, and as it was impossible to induce the uterus to expel the placenta, it became necessary to pass the hand for its removal. This it was found difficult to accomplish, owing to the smallness of the pelvis in its upper straight. After the afterbirth was withdrawn, a bandage was put round her with a moderate degree of tightness, and thus was terminated at nine o'clock the most difficult delivery I ever witnessed, and probably as much so, as the experienced gentlemen present have ever been engaged in.

Throughout the night burned brandy and opium were occasionally administered, and warmth sedulously applied. The next morning, February 5th, she had passed a quiet night, but was then complaining of pain all over the body, and particularly in the abdomen. Her pulse was 102, weak; belly tense, tympanitic, generally tender, especially towards the lower region; vagina very sore. It was at this period astonishing how well she had rallied; but her remaining history is that of peritonitis and sloughing vagina; the latter caused in a great measure by the constant trickling of urine over the inflamed

surface. From this she suffered intense pain. On the 12th February, the eighth day after delivery, symptoms of puerperal arthritis began to shew themselves. She complained of pain in the left elbow, then in the right shoulder, then in the knee of the same side; matter formed in these joints, and although she appeared to have got over the peritoneal symptoms, and the sloughs separated favourably from the vagina, worn out with pain, and greatly emaciated, she died on the 22nd February, eighteen days after delivery. Inspection revealed the same appearances I have seen in many cases, whose after history was similar, namely, extensive traces of peritonitis, inflammation of the uterine veins, purulent deposits around the joints, and in their cavities, abrasion of the cartilages, and infiltration of pus into different tissues of the body.

On reviewing the history and progress of this unfortunate case, the question is forcibly urged upon us, would this woman and her offspring have had a fairer chance of surviving, if premature labour had been induced at the usual period? I think a little consideration will lead us to the conclusion, that the operation would *not* have afforded a better prospect of success. It would appear indeed, at first sight, a matter of great importance, to have the substance, which has to traverse this narrowed canal of as small a bulk as possible. It may be supposed there would thus be less dilatation required, and consequently less risk of a prolonged labour, and of laceration. But before we can subscribe to this apparently self-evident proposition, we must take into consideration other circumstances connected with the processes of gestation and parturition.

In the first place we must remember it is a point determined by Merriman, that in premature deliveries (whether spontaneous or artificially induced), cross-births are by far more frequent than at the full time. And the same author has also shown, that if the shoulder or breech present, in such deliveries, but little hopes should be entertained of saving the life of the child; in fact, Merriman was never able to preserve but one infant that presented

preternaturally. This, then, is of itself an argument strongly opposed to the supposition, that premature labour affords to the infant a favourable chance of its life, and should make us cautious how we adopt it in any case that offers a rational prospect of the possibility of delivery being accomplished at the full time. But as this argument, of course, applies not only to the present instance, but equally forcibly to all cases in which it is proposed to resort to the operation, it should not be sufficient to dissuade us from adopting it, provided it can be proved it will preserve the mother from some imminent risk, such as extensive laceration of the vaginal or rectal septum, or the likelihood of death itself.

But even, as far as she is concerned, I think a little thought will convince us, the operation is not one which, under the particular circumstances before us, would afford her an equivalent advantage. In the first place, by artificially inducing labour, we lose the good effects of that tendency to relaxation so observable in the pelvic tissues, during the last weeks of gestation. At this time, it is well known the vaginal walls and surrounding textures become softened and lubricated with an increased quantity of fluid, by which they are prepared to permit the wonderful degree of distention they are afterwards subjected to. But if labour be brought on at an unnatural period, all these changes (which are so particularly desirable where the canal is obstructed by bands or cicatrices) are absent, and it will not in reality allow itself to be stretched, as far in proportion to the bulk which has to traverse it, as it would have done at the full time. Thus, while we gain the advantage of having the body to be transmitted of a small size, we actually bring upon ourselves the more than countervailing disadvantage in the less dilatable condition of the passage.

Another objection is, that generally speaking the plan which Hamilton has recommended for the induction of labour, namely, separating the decidua around the os, is either impracticable or fails altogether; and then the practitioner is driven to the

necessity of puncturing the amnion, and allowing the waters to escape. Now the ill consequences which follow the early evacuation of the waters, while the parts continue rigid in ordinary cases, point out to us how exceedingly undesirable it must be to bring the fœtus into direct contact with a contracted and probably lacerable vagina. These considerations make me doubt the propriety of resorting to this step, in the particular complication of labour we are now considering.

But, it may be asked, was not the deformity in M'Gahan's pelvis, a new feature in the case, and did it not, by increasing the difficulties, offer a sufficient reason for adopting this plan of treatment? I do not think so. The pelvis, though defective, was not so distorted or diminutive, as to give the child no chance of being born alive, or the mother no prospect of delivery *per vias naturales*. A full grown fœtus had already passed through it, dead certainly, but it had passed unmutilated. There was, therefore, as far as the bony structures were concerned, just as great room to hope the infant would be expelled alive, as in many cases we are constantly in the habit of seeing terminate favourably. Who can undertake to say that a pelvis, which has allowed a full grown dead fœtus to pass, will not be able to transmit a living one? There are too many circumstances which interfere with fœtal existence at one delivery, and yet do not prevail, or do not militate against it at the next (amongst which may be mentioned the relative sizes of the infants), to permit an experienced man to give any such decided opinion. Again, in M'Gahan's case, supposing the presentation to have been natural (as was at the full time most likely to have been the case), even if the worst of our anticipations with respect to the child had been verified, there would still have been the alternative of perforating the head, and reducing it to at least as small a size as it would have been at the seventh or eighth month.

But, it may also be asked, did not the presence of the fistulous communication with the bladder add so much to the im-

probability of a full grown child being able to pass without producing a serious lesion, as to justify the induction of premature labour? In some instances, certainly, this accident has happened. I am aware of one case, in which the passage of the child, under these circumstances, tore through almost the whole vesico-vaginal septum; but, generally speaking, little apprehension need be entertained from this cause. The edges of the fistula acquire so great a degree of hardness and resistance, that such cases usually do as well as if no breach of substance existed.

The arguments I have detailed appear to me to prove, that however valuable may be the operation for the induction of premature labour—and every one must admit, it is under certain circumstances one of extreme utility, nay imperatively called for—morbid contraction of the vagina, whether alone or combined with fistula, does not, for the reasons I have specified, constitute a case, which justifies, or is likely to be benefited by its adoption. Besides, I think the operation is one which involves such responsibility, that it is by no means to be resorted to, unless there be very sufficient evidence of the most lamentable consequences resulting from permitting the pregnancy to run its usual course. It is not sufficient that we *apprehend* danger from this or any other cause; before we undertake to step in and arrest the process of gestation, we must be satisfied there is no reasonable chance of delivery being successfully accomplished by any other method. I think, therefore, we may conclude, that the practice adopted with the foregoing case, is that which should be followed in one of similar difficulty; and we may fairly assert, that if happily the fœtus had presented in the usual position, the complications (great as they undoubtedly were) were not sufficient to have made us despair of a favourable termination, notwithstanding the unpromising condition of the parts.

I shall only further occupy the attention of the Society, while I notice one other point of practical importance connected

with this case; and that is, that no better illustration than it affords can be had, of the utility of the stethescope in determining the existence of pregnancy. Here was a case, in which all the *primâ facie* evidence was against it. The unmarried condition of the woman; the state in which there is every reason to believe the vagina had been from the period of her first labour, would most probably have led an incautious person to trust her own positive declaration of the impossibility of its existence; and even if his suspicions were sufficiently awakened, to cause him to institute a more rigid inquiry, in what way, I would ask, could he have arrived at a satisfactory decision, but by the stethoscope alone? All other means in *this* instance were unavailing. As far as a vaginal examination was concerned, it was impossible to obtain any information from it. The finger was arrested long before it could reach the os uteri, and consequently neither the changes in the neck of the womb, nor the abattement could be ascertained. The uterus was not sufficiently enlarged to allow a lateral motion of the fœtus, or ballottement, as it is termed, to be felt through the abdominal walls. No morning sickness or other constitutional disturbance, so frequently attendant on early pregnancy, existed; no suspicious disappearance of regular monthly changes, for she had never menstruated since her former delivery; and with respect to the breast, I never saw one which exhibited less of the peculiar characters attributed to it as evidences of impregnation. The female herself, being a hard-featured, skinny woman, the breast was small and flabby; it was devoid of unusual sensibility; the veins were unenlarged; and as for the areola, I have seen many and many a woman, in whom there could be no suspicion of pregnancy, present one better marked.

Thus all the collateral signs and symptoms of gestation were absent, or inappreciable, and incapable of determining whether the tumour felt above the pubis resulted from pregnancy, or from disease of a solid form, or from an enlargement consequent on menstrual accumulation; which last condition might not irrationally be suspected to exist, the result of a probable occlusion

of the os uteri. Between these states then the stethoscope was our only guide, and well it maintained its character, by instantly dispelling the mystery, and pronouncing the woman not only pregnant, but pregnant of a living child.

This individual instance would of itself be quite sufficient to stamp it the most useful agent for determining the question. I would not be understood to deny the utility of taking into consideration the other indications, where a doubtful case presents itself; but I would maintain, that, compared with the stethoscope, for general usefulness or for the accuracy of information it in the great majority of cases affords, all other signs sink into insignificance, and are, comparatively speaking, undeserving of confidence being reposed in them. I would, therefore, conclude by taking the liberty of recommending the junior part of my auditory not to neglect any opportunity of making themselves familiar with its use, which can only be done by patient investigation and frequent practice.

ART. V.—*Case of Ovarian Dropsy.* By WILLIAM JAMESON, M. D., Assistant-Surgeon to Mercer's Hospital, Consulting Surgeon to the Coombe Lying-in Hospital, and one of the Physicians of St. Peter's Parochial Dispensary.

ON the 21st March, 1840, I was requested by her aunt to visit Miss A., an interesting young lady, of about 20 years of age, then residing near Rathfarnham, whom she feared had been privately married, was consequently pregnant, and then in labour.

When I arrived, I found my patient in bed, complaining of very great pain all round the lower part of the abdomen, particularly at the left side, recurring at intervals; face flushed; pulse natural; hot skin; clean tongue; bowels confined.

On viewing the abdomen, I observed a large pyriform tumour, in every respect resembling a gravid uterus at nearly the full period of gestation; it extended beyond the umbilicus

about midway between it and the ensiform cartilage; was perfectly smooth on all its surface, pear-shaped, and equally firm to the touch on all parts, but tender on pressure near the left iliac region; no fluctuation could be detected in any part; and as pregnancy was apprehended, I made use of the stethoscope, but could neither discover the pulsation of a fœtal heart, nor the placental murmur.

I then instituted a vaginal examination, and found the os and cervix uteri small, and evidently in a virgin state. There was no enlargement of its body, or indeed any tumour whatever in the upper part of the pelvis. Ballottement afforded no information. A slight brown areola was observable round the nipples.

Previous History.—About the month of May, in the same year (nine months previous), she began to complain of sickness of stomach, particularly in the morning; occasional headach; wandering pains in the breasts, with confined bowels; catamenia regular.

As she lived at this time with her parents in the county Sligo, medical aid was obtained from time to time from some neighbouring physician, but without any benefit.

About the month of July, in the same year, she suddenly fainted after dinner, without any assignable cause; and now, for the first time, perceived a small tumour at the lower part of her abdomen, nearer the left iliac region than the centre, which was in no respect tender to the touch; all the other symptoms, such as sick stomach, &c., from this period appeared to lessen. She had, however, frequent attacks of violent abdominal pain, which would last for a day or two.

The breasts now began to enlarge, attended with constant shooting pain through them; catamenia recurring at regular intervals, but very scanty.

Her family becoming alarmed about her state, sent her to Dublin on a visit to her aunts, who had her seen by an apothecary in the first instance, who tried a variety of treatment

without any benefit, and the impression being, as I understand, that she was pregnant, an eminent accoucheur of this city was called in, who expressed himself doubtful as to the nature of the tumour, at this time increasing rapidly. Suffice it to say, that this gentleman, on a third visit, told her friends that he did *not* consider her pregnant; but advised the family to have their usual attendant physician in readiness, in case of any emergency.

Nine months having now passed over, and she having ex-experienced such pain throughout the night of the 20th of March, that her aunt (a married woman) could not be persuaded but that they were labour pains (particularly as she was aware she had not menstruated for three months previous), induced her to come into town for me. Therefore, after instituting the above examination, I had no hesitation in pronouncing her at once not to be pregnant, but that she had a tumour in the abdomen, which in all probability was ovarian.

To relieve the symptoms she then laboured under, I ordered a few leeches, stupes, some aperient medicine, and an anodyne in the evening, when the bowels had been well freed.

I saw her again the following day, 22nd March, and found her in all respects better; and had now an opportunity of observing, that her general health and spirits were extremely good; that she was, and had been throughout, particularly active on foot, and that in no way did her constitution appear to suffer from the local affection, except in the amennorrhœa then present.

Shortly after this, she returned home to her parents, in general health improved, but in size vastly increased; whilst there, she enjoyed pretty good health generally, as her appetite and sleep were good, and she continued very active on foot; the catamenia appearing at uncertain intervals, but her flesh was fast declining.

She did not again visit Dublin till about June last, when I was requested to see her. Her size at this time had remark-

ably increased; she really was enormous, the tumefaction commencing a little below the breasts (which were nearly absorbed), pressing out the ribs on both sides a considerable distance. The tumour presented all the characters of true ascites, the abdomen being uniform on its surface, and gentle percussion detecting fluid in all parts alike, under the abdominal parietes. I now advised the family to have other advice in consultation, as I considered in all probability the ovarian (or whatever tumour it might be) had caused sufficient irritation to induce an effusion of fluid into the peritoneal cavity. This request, however, was not granted at the time. So I ordered Ung. Hydrad. Potassæ ʒij. to be rubbed over the abdomen each night, together with some diuretic medicine.

I did not again see this young lady till the 10th August last, being three months afterwards, when the family consented to have a consultation; and accordingly, I had my friends Dr. Graves and Mr. Cusack to see her the following day. They likewise considered the fluid to be peritoneal; and we agreed trying small doses of Iodyne and Hydriod. Potassæ in solution, to be taken three times in the day; at the same time stating to the family, that if the tumour was not diminished by this line of treatment, that she ought to submit to the operation of tapping. I need scarcely add, that neither this, nor any other treatment hitherto adopted, ever appeared to exercise the slightest control over the tumour. On the contrary, from its appearance it proceeded with great and uniform rapidity up to November the 23rd, when I was again called on to see her, in consequence of her having been attacked, now for the first time, with difficulty of breathing, particularly in the recumbent position. She had also slight cough, quick pulse, foul tongue, constipated bowels, and had now grown really to a frightful size, the tumefaction pressing out the ribs, and forcing them also forward and upwards to such a degree, that the ensiform cartilage was at right angles with the sternum, which in its turn presented at the lower part a concavity which looked upwards. The lumbar

regions were protruded to such an extent, as to leave the spine, as it were, sunken between them. To relieve these feverish symptoms, some aperient medicines, and diaphoretic mixture were ordered, which relieved all but the difficulty of breathing, evidently produced by the mechanical cause stated, the action of the diaphram being thereby interfered with, and the size of the chest so lessened.

The dyspnœa continued to increase daily up to the 1st December, when I again saw her in consultation with Sir Philip Crampton, who also conceived the enlargement to proceed from fluid in the peritoneum, and recommended her strongly to submit to the operation of tapping. She accordingly consented to it, and the following day, the 2nd December last, assisted by my friend Mr. Cusack, I tapped her about three inches below the umbilicus in the median line, and drew off sixteen quarts of fluid, evidently ovarian, *being dark brown or coffee-coloured, glairy and tenacious;* we did not consider it prudent to empty the entire cyst, fearing inflammation should follow, but left (I should conceive judging from her size) probably about four quarts. She bore the operation well, after which she was swathed and placed in bed.

3rd. Had a very quiet night, slept well, but about eight eight o'clock in the morning experienced some pain in the lower part of the abdomen, which was altogether removed on passing water; had some troublesome cough during the day, and as the bowels had not been opened since before the operation, towards evening, she had a Haust. Rhei.

4th. Passed a quiet night, with the exception of the cough that annoyed her a little; but as the bowels had not been opened, and there being some slight vomiting, with tenderness on pressure over the tumour, I ordered Calomel gr. iv. Pul. Jacobi Veri. gr. i., to be followed up by an enema, which four hours after I found necessary to repeat. ℥ xiv. of blood were also taken from her arm, in consequence of an increase of the tenderness, with a pulse 120, and wirey; the abdomen also was well stuped.

I saw her again in the evening with Mr. Cusack; the bowels had been opened by the medicine; the tenderness much less; no cough; less vomiting, and in all respects better.

Cal. gr. ij. Pul. Opii, gr. $\frac{1}{4}$ quartis horis.

5th. Passed another quiet night; stomach a little disturbed towards morning; took three of the pills; deep tenderness on pressure, particularly round the lower part of the abdomen; great thirst; pulse 120; some difficulty on passing water. Twenty leeches to be applied over abdomen; continue stupes and pills, and to take ice.

Saw her repeatedly during the day, and at eight o'clock in the evening, found that the leech bites were still bleeding pretty freely; the tenderness of the abdomen, together with the thirst and vomiting, was less; liked the ice; complains of flatulence; belly tympanitic; the tumour increasing rapidly. To continue the pills; the opium to be increased to half a grain in each, and have a terebinth enema.

6th. Enema acted three times; had a quiet night; some return of sickness of stomach; pain much less on pressure; tympanitis subsided; pulse 120; mouth not at all affected by mercury. To have some chicken tea; continue the pills, and ice.

I saw her several times likewise this day, and at eight o'clock in the evening, finding the bowels to feel full, with some accession of pain, and sickness of stomach, ordered an enema, and after its action, a large blister to be applied over the abdomen. Continue the pills, chicken tea, and iced water as before.

7th. Passed a restless night, in consequence of having had eleven scanty, dark-coloured watery stools. The stomach was, however, less sick; pressure borne better; pulse 120. To take chicken tea, arrowroot, half a glass of claret, and to get an anodyne enema.

At two o'clock P. M., she complained of a dragging and burning sensation in the epigastric region; sickness of the

stomach returned, rejecting every thing off it. I had a mustard poultice applied which removed these symptoms.

At eight o'clock in the evening, Mr. Cusack again saw her in consultation; we found the pulse stronger, but 120; sickness returned in an aggravated degree, also the pain and burning sensation over the stomach; deep pain discovered on pressure, but no inconvenience arising from it except on manipulation, no evidence of the mercury having affected the system. Diarrhœa continues; ordered a small blister over the stomach, and the following pill to be repeated every fourth hour,

℞ Hydrarg. c. Cretæ gr. iv.
Mur. Morphinæ gr. $\frac{1}{4}$.

together with a starch and opium enema, to be repeated in the course of the night, if the bowels continued troublesome; to take a glass of port and water in the night.

8th. Ten o'clock A. M., only one enema administered; passed a quiet night; slept well; vomiting restrained; bowels only once disturbed since last visit; little or no tenderness on pressure; pulse 120. Blistered surface of abdomen dressed with Ung. Hydrarg. Fort.; mouth not touched. Continue pills, chicken tea; allowed an egg with some tea; to have a little port wine and water during the day.

Eight o'clock in the evening, slight mercurial fœtor; tenderness of abdomen gone; had several watery stools during the day, with return of sickness of stomach. Leave off the pills; had her given an anodyne enema; cold chicken tea; continue ice during the night.

9th. Ten o'clock A. M., had rather a quiet night, but was disturbed by the bowels towards morning; the pulse is still 120; thirst continues; stomach still irritable; there is no tenderness on firm pressure over the tumour, which is fast filling.

It is needless to give a daily report from this day till the 30th; suffice it to say, that all tenderness disappeared, but the sickness of stomach was seldom entirely absent; the pulse never

came down below 120, although it was sometimes frequently even 130; the ankles also began to swell. The diarrhœa (which latterly assumed an intermittent form, recurring every second day) was always present, except when controlled by astringent medicines, containing Acet. Plumbi and Acet. Morphinæ, varied occasionally with a mixture containing Infus. Krameria Tinct. Kino, Catechu and Opium; anodyne enemata were given at night. These medicines always appeared to give relief.

Her diet consisted of the mildest and most nutritious food, port wine and water; and to relieve flatulence, which latterly became very troublesome, Camphor Mixture, Fœtid Spirit of Ammon. with Tinct. Opii, were employed, which always gave relief.

It now became necessary, on account of some family arrangements, that she should be removed from Dublin to Kingstown, which was accordingly done. She bore the journey well, was very little fatigued by it, and passed rather a comfortable night after it, and as the bowels for the last two or three days had been rather better, the pulse being still 120, there being some perspirations at night about the head, with rather a hectic cast of countenance, I tried what a mixture of the infusion and Tinct. of Bark with Opium would do; and to relieve a vast tympanitic state of the bowels, had a large fœtid enema thrown up, which procured a copious stool, much of the same character as those she had been passing, together with the expulsion of much flatus; it did not, however, give the relief one would be led to expect.

On the 1st of January, she felt herself so much better, that she requested to dine with the family in the parlour, which was accordingly granted; after dinner, however, she was suddenly attacked with a violent shivering fit, and a sudden severe pain in the centre of her abdomen, accompanied with a sensation of bursting. These symptoms continued for a considerable time after her

removal to her room, whither she was conveyed, and on the swathe being removed, her attendant informed me, that in the situation where the trochar passed the part was very red, and protruded about the size of a walnut, possessing a broad red base. This she had stuped, which gave some relief, but she passed a most wretched night, and the following morning, 2nd January, this tumour gave way, and discharged a considerable quantity of gas with fæculent matter, which naturally so alarmed her attendant, that after having placed a fold of lint over the aperture, and secured it with adhesive plaster, she instantly sent for me; I was however unable to see her till evening. I then found my patient in bed, with pale and sunken countenance, cold clammy sweat over all the body; pulse small, quick, and compressible; cold extremities; tumid belly, but in no part tender to the touch in any way. On removing the lint there was no doubt as to what had occurred, for a large quantity of dark-coloured, fæculent matter escaped, with an equal quantity of gas, through an apperture about the size of a shilling, having a broad gangrenous base about two inches in diameter, and occupying the place where the puncture had been made by tapping. She experienced some relief from the discharge. I immediately administered a cordial, had hot jars applied to the feet, stupes to the abdomen, and ordered a grain of Ext. Opii every fourth hour.

I had very little expectation of finding my patient alive on the following day, but to my surprise she was better, having passed a comfortable and quiet night; the pulse had come down in frequency; she looked better; warmth was well generated; had some desire for food, but the belly was large and tympanitic. She had taken but two of the pills since last night. On removing the plug from the artificial anus, the slough, which was only superficial, had been mostly thrown off, and the part under it looked pretty well, the aperture leading into the intestine was, at its upper part, through which I squeezed a large quantity of fæculent matter and gas, attended with some

relief to the wretched sufferer. Continue the pills at longer intervals; beef tea, wine, jelly.

The following day I was informed she continued much the same way, therefore did not see her till the 5th. Had a few motions from the aperture of the same character; these were always preceded by a burning sensation at the part, and whether the plug was removed or not, the contents were forced out whenever this sensation occurred.

She continued from this date till the 14th, the day on which she died, with little variation of symptoms, with the exception of a complete constipation, which on more than one occasion lasted for two days together, and to relieve which I had an emollient enema thrown up the rectum; however this very seldom brought any fæculent matter through it (the rectum), but procured stools through the artificial anus.

On one occasion I had the following draught given, the action of which appeared to be very violent indeed:

℞ Pul. Rhei. gr. x.
Sulph. Potassæ. gr. xv.
Tinct. Rhei. ʒ i.
Aquæ Cinnamomi. ʒ i.
Ft. Haustus.

as at least two quarts of matter like flummery were discharged through the opening. On this occasion she got some brandy and water to support life. However, she died on the 14th, having been free from all bodily pain for the last twenty-four hours, and retaining her faculties to the last moment.

As I was very much interested about this case, the family at once kindly acceded to my wishes, in allowing a post mortem examination, which I accordingly performed on the 15th January, nineteen hours after death, assisted by the intelligent resident pupil of Mercer's Hospital.

Autopsy.—We found the body reduced to a mere skeleton; the abdomen large, with several livid spots on the lower part of it. Fœtor almost intolerable; legs very œdematous.

On making an incision through the abdominal parietes, we cut into a large sack, which at first we imagined to be the peritoneal cavity, but which, on further examination, we found to be the ascending and transverse colon, or at least, the place they should occupy, filled with not less than four quarts of liquid fæces. This sack extended from the place occupied by the caput coli under the ribs at the right side up to the diaphragm, having the liver internal to it, and extending superiorly across the anterior part of the abdomen, towards the leftside, where the intestine resumed nearly its usual calibre. In fact, the ilium appeared to open into a large cavity, possessing in no one particular the slightest appearance of intestine, save and except in its contents. This cavity occupied all the right half of the abdomen, and had a small passage leading from it into a portion of that part of the transverse colon which communicates with the sygmoid flexure. It appeared to be supported externally by the general parietes, internally by an enormous tumour, which filled all that part of the abdomen between the pubes to midway between the umbilicus and ensiform cartilage, coasting along the upper portion of which, towards the left, we had the only part of the colon which we could distinguish as large intestine visible. This was a small part of its transverse arch to which the gastro-colic omentum was attached; the inferior part of this portion of intestine, or that to which the great omentum is attached, was no where visible, and its place appeared to be supplied by the base of the tumour.

On cutting through this gastro-colic omentum, we obtained a complete view of the stomach and all the small intestines, apparently perfectly healthy, but all pushed up, in fact, into the thorax; and now we had an opportunity of tracing the tumour, which was more globular than pyriform, perfectly smooth on its upper and posterior surface, and every where in such intimate connexion with the general parieties anteriorly, that it could not be separated from it except at the left iliac region, where there

was a small abscess interposed, and at the right, by this enormous sack filled with fæces.

On cutting into the tumour towards the upper part of the right side, the walls of which were very thick, we opened into a cyst containing a fluid of the consistence and colour of white of egg; a little below this, we opened into the original tumour, or that which was tapped; this contained a large quantity (say four quarts) of a *fluid resembling whey* in colour and consistence; the inner surface was very smooth, and on passing the hand into it, the former tumour was felt projecting into it at the right, about the size of a child's head, and another at the left side, about the size of an orange, while inferiorly we had the bladder. Behind, this tumour had contracted no adhesions to any part; the uterus and the right ovary were perfectly healthy; all the small intestines, stomach, kidneys, liver, and sigmoid flexure of colon to its termination in the rectum, were also found perfectly healthy; the lungs in a similar state.

Observations.—The foregoing case I considered to present so many points of interest in a pathological, as well as in a practical view, that I have been induced to give it in a somewhat lengthened form. My remarks on it shall be very few; nevertheless, it appears to me to be so replete with interest, that I shall beg to submit those that have occurred to me as regards it.

In the first instance, the early symptoms, up to the ninth month, were so nearly identical with pregnancy, that were a hasty decision arrived at, without calling in the aid of ballotment, a vaginal examination, and auscultation, several serious results might have ensued in a moral and other points of view. The gradual increase of the tumour up to that period, the presence of the brown areola round the nipple; and, above all, the pains which came on at the termination of that month, so similar to those of labour, and which were the cause of my being sent for in the first instance, were all calculated to deceive very much, and lead to the conclusion that this lady was pregnant.

The presence of the catamenia, no doubt, would, probably in the opinion of some, contraindicate this condition; but we know well that its presence or absence is in no way to be relied on, several instances being on record where menstruation, or at least a coloured discharge resembling it, has continued during the entire of gestation. After this period, the rapid increase of the tumour to the enormous size it arrived at, well deserves attention, for, although I am aware that dropsy of the ovary grows after some years to an immense size, yet I am not acquainted with any case where the increase went on to the extent it did in this instance, displacing the ensiform cartilage, sternum, and ribs, in the way I have stated, and in so short a period. The greatest interest, however, of the case is, in my opinion, in the post mortem appearances. The continual sickness of the stomach after the operation is at once accounted for, by the adhesion that existed between that portion of the transverse colon which was attached to the tumour causing a dragging always at the stomach. The immense cavity into which the descending and transverse colon would seem to have been thrown is most remarkable; and I confess I am at a loss to decide upon it, could it have been other than the colon enlarged in the enormous way a hasty view of the subject would lead to. I would on this point beg to submit a circumstance that lately came to my knowledge, upon making more minute inquiries as to her state previous to the operation, namely, that for several weeks prior thereto, a structure similar to membrane was frequently passed by stool. That this cavity must have existed previous to the operation, I feel satisfied; for surely if it had taken place after it, we would have had some traces of that portion of intestine visible at the examination, for it could have scarcely disappeared in a period of less than seven weeks. Yet again, it may be said, how were stools procured through the rectum previous to the formation of the artificial anus, as there could be no peristaltic action in a part that did

not exist? I could only explain this on the supposition that the contents of the sac, when distended, were propelled into the opening in the existing part of the transverse colon by the action of the abdominal muscles. This state of the parts, I also suppose, accounts for the uniform quick pulse, having never been below 120, and frequently much beyond it. Again, the fluid drawn by operation from the ovarian tumour was dark brown, glairy, and tenacious; that which was in it after death was like whey, in colour and consistence. What caused this change?

Upon the whole, I consider this case must be looked upon as most interesting, and one of those that sometimes occur in pathology, in which the appearances that are met with after death, are insufficient to give a satisfactory explanation of many of the symptoms that were to be observed during life.

ART. VI.—*Case of enormous Aneurism of the Aorta, without Hæmorrhage being the Cause of Death.* By JAMES FOULIS DUNCAN, A. M., M. B., Fellow of the College of Physicians, Member of the Royal Medical Society of Edinburgh, and Physician to the North Dublin Union Workhouse.

[Read before the Association of the College of Physicians, and published at the request of the Association.]

MICHAEL DONOHOE, a stout athletic man, thirty years of age, but of a pale unhealthy aspect, entered the Workhouse of the North Dublin Union, Sept. 20, 1841, with a large pulsating tumour on the upper part of the sternum, for which he was immediately placed in the Hospital of the Institution. He stated that he had always enjoyed good health till about two years previously, having resided in the vicinity of Dublin from childhood; at that period he got a severe cold, from which he never recovered. He was a labourer in a quarry, and used to lift the heavy masses of stone into a cart when loading it; this is done

frequently by making the breast bone a sort of lever to assist the hands, but he never recollected to have strained himself in this way, or suffered any inconvenience from it. He acknowledged to have been addicted to the use of spirituous liquors.

Without any obvious cause he was seized, about sixteen months previous to his admission, with a palpitation about his heart, which was so violent, as to raise the clothes off his breast; after this had continued about two months, he felt a pain inside the chest, and in about two months more he observed a swelling at the upper part of the sternum, which gradually increased to the size it presented on his admission.

On examination, a large tumour was seen over the upper portion of the sternum, about four inches in length, stretching obliquely upwards from about the lower edge of the third rib, on the left side, to beyond the sterno-clavicular articulation on the right. It projected considerably forward, and seemed to be divided unequally into two portions, the greater, which was also rounder and more prominent, being on the right side. It pulsated visibly and with equal force in all directions; the impulse communicated to the hand was very strong; it was not painful on pressure; he did not complain of suffering much from pain, but from anxiety and loss of sleep. His spirits were depressed, and he was very restless at night, not being able to sleep for more than ten minutes on either side, nor more than half an hour on his back. He felt no dyspnœa, and the lungs, on examination by the stethoscope and percussion, were perfectly healthy; there was no stridulous breathing, neither was the voice affected, nor did he complain of any dysphagia. The carotids on both sides seemed to act with great strength and force; the pulse was only 56, that of the radial artery on the right side was full and steady, while the left was so small as to be scarcely felt; he complained of pain darting down from the left shoulder, along the arm to the fingers, and of another in the cervical region, extending to the shoulders. This was the only pain he suffered during the continuance of his illness; his

pupils were usually dilated, and there was œdema of his feet and legs.

There could not possibly be any doubt of the nature of his disease under the above circumstances, and a diagnosis of an aneurism of the ascending aorta was immediately pronounced. In his hopeless condition, the only treatment attempted was to palliate his sufferings, and to combat symptoms as they might arise. He was ordered draughts containing two drops of Prussic Acid, and ten drops of Tinct. Digitalis.

On the 25th September, the tumour was considerably enlarged, and the two portions seemed nearly thrown into one, but the division, though not visible, could still be felt. There was on that day some œdema under the left clavicle, as well as of the left wrist and hand; the pulse was 68; the surface cold; the respiration, though vesicular every where, was louder in the right lung anteriorly than in the left, where it was faint and soft. From the increase in the size of the tumour, and from his having begun to feel some pain in it, I was induced this day to order him to be bled to eight ounces, although he complained much of weakness, and at the same time to increase the quantity of sedative medicine he was taking.

September 26. Felt lighter; pulse 76, but still jerking; had some sleep from an opiate the preceding night; blood not buffed nor cupped; left arm more œdematous; generally lay on that side.

Cont. Haust. Sedat.

September 27, pulse 72, softer and less jerking; felt much better; slept better than for some time previous to admission. No change in the treatment.

September 28. Felt weaker; stethoscopic symptoms as before; no difference in the intensity of respiration in the two lungs posteriorly. Both the impulse and sound are much greater in the tumour than over the region of the heart.

September 30. There was some dulness at the base of the left lung posteriorly, and loud bronchial and sonorous rales

there; other parts of the lungs healthy; not much cough; respiration much louder in right lung anteriorly than in left, where it was masked somewhat by the loudness of the heart's action, which was violent; pulse 72; urine increased in quantity; bowels free; generally lay a little inclined towards the left side.

℞ Pil. Scillæ. gr. iij.
Pulv. Digitalis gr. i.
Fiat Pil. ter die sumenda.

October 8. Continued much the same as before; pulse 88, still jerking; slumbered a good deal as well through the day as at night; passed much urine, but the bowels were confined; general anasarca in a slight degree; anorexia; threw up his food immediately after taking it. Broiled meat and tea.

October 13. Gradually getting weaker; the tumour at this time was much enlarged, and he complained of a shooting pain at the back of his neck, being very severe, describing it as a "cruel pain." From this time he was scarcely ever able to leave his bed.

Vin. ℥ ii. per die.
H. Opiatus, o. n.

October 15. Tumour was at this time so large as to fill the whole of an extended hand laid over it. The integuments under the chin were so œdematous, that the chin almost rested on the tumour, and pitted deeply on pressure; the left side of the neck very œdematous; some soft cough; bronchitic rales generally all over the lungs, and particularly at base of left lung posteriorly, which was dull to the level of the point of the scapula, but not femoral; considerable dyspnœa, heart's sounds had disappeared, and been supplanted by a thick, thumping noise. Even in the tumour the bruit de soufflet could with difficulty be recognized; pulse 108, feeble, but still jerking.

Cont. Vin. ℥ ij.
H. c. Mur. Morphiæ. o. n.

October 20. Was sinking evidently; almost unable to support himself in bed; bronchitic effusion increased; lips livid; œdema of face and side greater than before; loud mucous rattle in the trachæa; pulse 92, very irregular and weak; his body less agitated by the violence of the impulse of the circulation; extremities warm. Had been ordered an expectorating mixture, which did not seem to have been of much service to him. Wine seemed to agree better with him than anything else, making him more lively, but not increasing the palpitation. Complained of being in great pain, but could not tell where. He was so weak that no examination of the posterior part of lungs was made.

Vin. ℥iv.

October 11. Died through the night, but not from hæmorrhage.

Post Mortem.—The tumour had considerably subsided, but was still of great magnitude. Anasarca of the whole body. On cutting into the costo-sternal cartilages, near the upper part of the right side, an immense quantity of clear serum gushed out, and the same occurred on the left side also, but mixed with flakes of coagulated lymph; the cavity of the left pleura was entirely filled with this liquid, and the walls of it greatly thickened with a dark layer of coagulable lymph; the lung itself was completely compressed by the effused fluid upwards and backwards, and remained in a state of carnifaction. The right lung was crepitant to the touch, but evidently the air-tubes were filled with mucous secretion in superabundance.

The heart was greatly enlarged; and on slitting into the cavity of the aneurism, it was found to have given way by a transverse slit, and the effusion of blood to have been restrained by the muscular and other structures in front; the upper part of the sternum had been removed by absorption; the internal coat of the aorta was filled with osseous depositions, and the valves of the heart were unable to fulfil their functions from the stretching of the transverse diameter of the opening.

The case just detailed appears to me interesting in a variety of points, whether the size to which the aneurism had attained, the absence of local pain, or the remarkable mode of its termination be considered. Several members of the profession had an opportunity of seeing the case during life, and the preparation of the parts taken from the body was exhibited at the Pathological Society at its first Meeting this season, and every one was struck at the enormous extent to which the disease had reached. I regret that I had not a drawing taken at the time, as the preparation unfortunately did not give an adequate idea of the size of the tumour during life. Yet remarkable as this was, it was to me still more remarkable that an aneurismal tumour of such dimensions, which had already passed the limits of the thorax and perforated the bony walls which form the natural boundaries of that cavity by the absorption of the sternum should not have burst and destroyed life by hæmorrhage, before any great inconvenience had been felt by the pressure which it excited on the contiguous parts. As it was seen thumping away on the front of the chest, such was the force of the pulsation and such appeared to be the thinness of the parieties of the sac, that the spectator could not be surprised if at the very moment of inspection they had suddenly yielded, and death instantly resulted. The immediate cause of death was evidently the effusion into the pleural cavities of both sides. But this does not appear to have been simultaneous as to time, or similar as to the mode of occurrence. The effusion into the left lung certainly preceded that into the right, as was proved by the physical signs during life as well as the appearance of the effused fluid. Both of them in all probability originated in the mechanical impediments to the circulation which, from the local position of the parts, necessarily affected the left pleura before the other; and this circumstance occurring at a period when there was more vitality in the system as well as a longer time before death, for the commencement of inflammation, explains the fact that flakes of coagulable lymph were

discovered floating in the serum as well as lining the sides of the left pleura and not of the right. To the same circumstance of local pressure is to be attributed the difference in the pulses at the wrist upon either side, the earlier occurrence of œdema in the left arm and the neuralgic symptoms. It is also to be remarked, that this pain, which was evidently nervous, but which he said was occasionally "a cruel one," was the only one he complained of during his illness. It commenced in the cervical vertebræ, and used to shoot down to either shoulder, and was probably caused by the reflex action of the phrenic nerves upon their origins in the spinal marrow, occasioned by their filaments being stretched in consequence of the hypertrophy of the heart itself. Dr. Green has already remarked how little suffering is caused by aneurism when seated on the anterior surface of the aorta, compared to what is the consequence when it springs from the posterior surface. How this is to be explained is not easy to determine, but the fact is sufficiently important to be attended to.

During the course of his illness he was not affected with dysphagia, stridulous breathing, or that modification of the voice which has been observed in similar cases; and this is obviously to be accounted for by the position of the aneurism, which in its early stage was too small to exert pressure on the parts, which would give rise to these symptoms, as when its magnitude became so great as necessarily to exert that pressure, the absorption of the sternum, by making way for its enlarged dimensions, obviated its occurrence. There was, however, a sign evidently caused by pressure on the internal parts, and which proved its existence, although only to a limited extent, but which is the more worthy to be noticed here beeause of its importance in cases of a more doubtful nature; I mean a difference in the relative intensity of the respiration in the two lungs. The respiration, though perfectly pure in both, and unmixed with any bronchitic or abnormal rale, was sensibly fainter in the left lung anteriorly than in the right. On the posterior sur-

face this difference did not exist. It was not as great in this instance as I have remarked in others; but it was sufficiently distinct to satisfy me, as well as others, after repeated examinations, that it was real and permanent.

Another point that I consider worthy to be noted is the circumstance, that both the impulse and the bruit de soufflet was decidedly louder and more marked in the aneurism itself than in the heart. To examine this subject fully would occupy more time than the Association would like to bestow upon it, but the instance adduced is not the only one I have met with when the same symptom occurred. If the heart were really in all cases the sole source of arterial action, such a phenomenon could not possibly occur, and this fact, coupled with the other arguments usually adduced for the purpose, completely overthrow such a hypothesis. In the instance before us I would say that the existence of local inflammation about the aneurism, proved by the gradual absorption of the sternum and the matting together of the surrounding tissues discovered after death, was the real cause of the greater arterial action in the aneurism than in the heart itself.*

It may be thought, perhaps, surprising, that aneurisms should occur at this early age, when the obvious changes in the arterial trunks which precede its occurrence, do not usually take place till a later period; fragility of the tissues, and ossification of the coat being properly diseases of old age. But that it is a common occurrence cannot be doubted; in looking over the histories of a number of cases of thoracic aneurism which have been recorded, I have observed, that when the age of the patient has been mentioned it has been similar. That intemperance may have some effect in producing that state of the arterial system, upon which the occurrence of aneurism depends, is ex-

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* One of the most remarkable cases of this kind I ever saw occured in a patient in the Richmond Surgical Hospital, under the care, I believe, of Mr. Adams; but it was evident to every one, that the impulse was much greater in the aneurismal tumour, than in the heart itself.

ceedingly probable, both from the class of persons who are usually the subject of it, and the much greater frequency of the disease in men than women. In looking into the Report of the Registrar-General, of births, deaths, and marriages, I find that in the year 1838, there were eighty-eight men died of the various forms of aneurism in England, while the number of women dying similarly was only thirty-one. And the case before us, I think, affords us another argument in support of the same view, from the remarkable slowness of the pulse, a circumstance frequently to be observed in persons of broken down constitutions from intemperance.

From the first I did not anticipate much advantage from the assistance of treatment, and my object was rather to prevent injury, by keeping the patient tranquil, and avoiding whatever was likely to prove pernicious, than to attempt any thing more decided for his relief. The disease was so far advanced, and his life was in such imminent risk of momentary extinction, that I felt afraid of making the effort, even if I knew how it was to be accomplished. But I cannot help remarking the benefit he seemed to derive from a small allowance of wine, after he had taken sedatives for some time without relief. Instead of increasing the palpitations, it had the opposite effect, of giving him relief, and rousing his spirit, and I am inclined to believe, that in many cases of heart disease, where digitalis and other sedatives are usually prescribed, we should find more benefit from an opposite plan of treatment; at least, such has been the impression upon my mind, from what I have seen and read, and I think both the previous habits of these patients who are usually addicted to the use of ardent spirits, and the physiological condition of the heart itself support this opinion.

This organ, whenever the valves are not effective for the purpose for which they were designed, is weighed down with an unusual load of blood, continually pressing upon its unprotected cavities, and hence is deprived of that momentary but real rest which it enjoys in a state of health. It is placed under a double

disadvantage when thus circumstanced, on the one hand its motive power is diminished by the impossibility of its actions being alternated with repose, and on the other its real duty is increased by the augmented pressure of the column of blood against its walls, so that at each effort of contraction it is required to act with unusual energy. Thus its irritability is exhausted, and it naturally requires the addition of an artificial stimulus to sustain its efforts, and fulfil its duty. The truth of this remark is shown as well by the benefit the patient derived from wine, as by the increase in the frequency of the pulse under the use of digitalis, which would naturally have had an opposite effect, and which cannot be accounted for upon any other principle than that just laid down, namely, that by diminishing the muscular force of the heart's contractions, it necessarily produced an increase in their number. The quantity of wine ordered daily was very small, perhaps he would have borne with impunity, or even advantage, some increase in its amount, had it been gradually made, and carefully watched, but the case was so utterly hopeless from the first, that I did not think it necessary to make the experiment.

BIBLIOGRAPHIC NOTICES.

On Rheumatism in its various Forms, and on the Affections of internal Organs, more especially the Heart and Brain, to which it gives rise. By Roderick Macleod, M. D., Physician to St. George's Hospital.

We strongly recommend the volume before us, to the attention of our readers. The author has had vast opportunities for acquiring a knowledge of this disease, and we state without hesitation, that his work will prove, that he has taken advantage of them. We have seldom read a treatise that has given us greater pleasure; the style is clear, and the arrangement of the subject excellent.

Dr. Macleod classes cases of rheumatism under four heads. 1. Rheumatic fever (the arthritic or capsular); 2. The chronic or muscular; 3. Neuralgic; 4. Periosteal.

Our limits will not allow us to lay before our readers any of the remarks contained in the two first chapters, which treat of the symptoms, pathology, &c., of acute rheumatism. This is, however, of no great consequence, as neither the author's dissections nor those of Chomel throw much light on the condition of the affected joints. He says:

"Opportunities very rarely present themselves of examining the joints during the actual existence of acute rheumatism, because patients very seldom die during such attacks; I have, however, in two instances been able to examine the state of the parts primarily affected, but without finding any very striking results. The external redness had subsided in both cases, and the swelling was very much diminished, so that nothing appeared but a certain portion of serum, or serum and lymph, in the subcutaneous cellular membrane. The fibrous tissues were perhaps rather thicker than natural, but without redness. The synovial membranes were without any apparent participation in the disease.

"In a case of rheumatic fever which occurred to M. Chomel, of the Hotel Dieu, Paris, the patient was rapidly cut off by pericarditis. As there had been severe affections of the points with much swelling during life, M. Chomel examined them carefully after death, and describing the result, he says, 'L'examen de toutes les articulations

n'a fait decouvrir dans aucune d'elles le plus leger vestige d'un travail inflammatoire.'"—p. 17.

In the third chapter, he discusses the treatment of rheumatic fever. He does not acknowledge the "*specific*" nature of the inflammation of rheumatism, and supports his views by the following reasoning:

"Now the more I see of rheumatism in its *acute* form, the more I am disposed to think that at its onset it is amenable to the same laws as other inflammations. When an attempt is made to enforce this argument, the most common answer is, that rheumatism is a 'specific disease,' and by this all its peculiarities as to pathology and treatment are supposed to be accounted for. But I suspect that this expression is often used without any very 'specific' meaning. If it be intended to intimate that rheumatism is not identical in its phenomena with various other inflammations, it is unquestionably very true; but the same observation holds good equally with regard to the inflammation of numerous other textures, as well as of those implicated in rheumatism. Pleuritis is manifested by different general symptoms and different organic changes from bronchitis, and pulmonitis is in these respects different from both. Inflammation of the skin differs from that of cellular tissue; that of veins from both. Why, then, should we think it necessary, in the case of rheumatism, to seek for any other causes to explain its peculiarities different from those which we admit as accounting for the analogous peculiarities observable in the inflammations above enumerated? I say that the difference between the inflammation of the fibrous textures in acute rheumatism, and that of any other texture which may be assumed as a standard of comparison, is not greater than between such standard and various other inflammations which might be named. Again, if by 'specific' he meant that there is anything in the exciting cause of the disease different from that of other inflammations, there is obviously no ground for the assumption. Atmospheric vicissitudes give rise to rheumatism, or pleurisy or ophthalmia, and are not more unequivocally the origin of one of those than of another. With syphilis and other really specific inflammations, the case is very different. Acute rheumatism at its onset, so far as I am able to judge, does not differ so much from other inflammations, as to warrant the great difference in the treatment usually adopted; and this, I think, has led to formidable evils, both by unnecessarily protracting the cases, and suffering organic changes in the heart and its investments to proceed unchecked."—p. 29.

The chief remedies he employs are bleeding, purging, and opium. The latter, he uses more sparingly than we do in Dublin; he seldom gives more than two grains in the twenty-four hours.

In the chapters devoted to the affections of the heart, the author gives a full account of the present state of our information on these subjects.

The following is an admirable description of the symptoms that accompany the first stage of pericarditis in acute rheumatism :

" Of the symptoms which indicate that the heart has become implicated in an attack of acute rheumatism, the most striking is the aspect of the patient. I venture to say that there is no observant practitioner who has not had occasion, on going into the wards of our hospital, to stop at once on coming to a rheumatic patient, whom he may have seen the day before apparently doing well, and proceed to examine the heart with the conviction on his mind, before he has asked a single question, or applied his stethoscope, that carditis has supervened in the interval. This is one of the many instances in which the eye can detect what the pen cannot express. The system has taken the alarm at the new inroad of the malady ; the consequent distress is depicted in the countenance, and told in every attitude and every movement. The expression is anxious ; the breathing rather *shallow* (?) ; occasionally there is cough. The patient is sometimes very restless, but more generally lies on the back or right side ; at least it is rare to see him choose the left. Here we have intense fever, but for the most part without the restlessness and tossing that usually attend that state. Indeed there is occasionally a fixedness in the general aspect, I had almost said deportment, of the patient, quite remarkable ; he becomes, as it were, passive, and while the immobility with which he retains one position, would lead us to suppose that any other would be intolerable to him, yet I have known such a patient, upon being moved, remain in his new position apparently as determinedly as he had previously done in the other. Although, therefore, inclining on the back, or a little to the right, be the most common, and therefore, we must presume, generally the easiest posture, yet the unwillingness to move, even to resume this attitude, probably depends upon the effect produced by motion of any kind on the heart's action, which thus becomes for the time still further embarrassed. In the cases where this unwillingness to any change of posture is most marked, the action of the heart is usually feeble, and the sounds indistinct."

Towards the end of the work, Dr. Macleod speaks of the changes that take place in the chronic forms of arthritic rheumatism. In examining joints which had frequently been the seat of inflammation, he has seldom seen anything which could be called disease, with the exception of a supernatural quantity of synovia. Sometimes he has found the synovial membrane thickened, particularly in the small joints, constituting, as he says, " what Dr. Haygarth described many years ago, as *nodosities* of the joints, but apparently without fully understanding its nature ;" a situation in which, we are sorry we must allow the Doctor to bear him company.

He next alludes to the occurrence of suppuration in joints

affected with rheumatic inflammation, and states that he has seen several cases of it.

Before concluding our notice of this treatise, we cannot help expressing our regret that Dr. Macleod should have omitted a description of that important form of the disease known in Dublin by the name of the "*Chronic Rheumatic Arthitis.*" This form of rheumatism has been frequently and ably described by our talented fellow-citizens, Mr. Adams and Mr. Robert W. Smith, of the Richmond Surgical Hospital. Mr. Smith's paper on the subject appeared in the sixth vol. of this Journal, and Mr. Adams has given an account of the disease in his articles published in Todd's Cyclop. of Anatomy and Physiology, under the heads of Abnormal Condition of the Hip and Elbow Joints, &c. Besides which, both of these gentlemen have brought forward numerous specimens of the disease at different Meetings of the Pathological and Surgical Societies of Ireland, accounts of which have from time to time appeared in this Journal. We hope therefore that Dr. Macleod will give this matter the attention it merits, and render the second edition of his work a *complete* treatise on rheumatism. In the meantime we wish him all the success his undertaking so well deserves.

The Elements of Materia Medica, comprehending the Natural History, Preparation, Properties, Composition, Effects, and Uses of Medicines. By Jonathan Pereira, F. R. S., L. S., &c.

Elements of Materia Medica and Pharmacy. By O'Bryen Bellingham, M. D., &c. &c. Edited by Arthur Mitchell, M. D., &c. &c.

A Manual of General Therapeutics, with Rules for prescribing, and a copious Collection of Formulæ. By D. Spillan, M. D., A. M., &c.

Materia Medica, if it be a distinct science, must have some definite and specific objects. If it consist, as some writers appear to imagine, in a heterogeneous *melange* of Chemistry, Botany, Zoology, and Practice of Medicine, why not apply ourselves to the best works on those sciences, in place of scraping together a superficial and undigested mass of useless information? useless because not sufficiently accurate and minute to serve as a guide in practice. No one, from the botanical descriptions in any Materia Medica, could, if otherwise ignorant of the science, recognize a plant, or in a foreign land, detect

those allies which might be expected to possess similar properties. No one, otherwise ignorant of chemistry, could, with safety to himself or the public, prepare a salt, or distil a corrosive acid, from the directions afforded to him in any of the works alluded to; and the physician who might depend on his dispensatory for the means of curing his patients, would soon find himself disappointed. A knowledge of diagnosis, pathology, chemistry, and botany, must be sought for elsewhere than in books on materia medica; and we maintain, that if there be nothing in materia medica but what is borrowed from other branches of knowledge, it has no real existence as a science, and its study ought to be abandoned.

But there are objects of inquiry in materia medica which belong exclusively to it, and a knowledge of which are indispensable to the informed physician. A treatise on this subject should contain a careful description of the kinds and varieties of drugs, their physical characters, their chemical composition; the sources from whence these drugs are obtained ought to be indicated, as well as the countries they are brought from; to these should be added a description of the manner in which they are obtained; and an accurate account of the means by which their purity can be tested. A general history of drugs used in medicine, therefore, constitutes one object of materia medica.

The processes of mechanical division and separation, solution, evaporation, distillation, &c., by means of which drugs are prepared for use, and the forms fitted for particular purposes, are multiplied: the proper methods of combination; the modes best calculated for exhibition; the menstrua that ought to be selected; and the incompatibles that should be avoided; all, in fine, that is comprehended under the name of pharmacy, constitute another and very important department of the science.

But that, without which the history of drugs is vain, and pharmacy becomes useless—the knowledge of the reaction of the living tissues with medicinal agents; the modifications which lesions of those tissues produce in these reactions; the adaptation of those modifications to the removal of these lesions, and to the restoration of healthy action—these are the subjects, that, under the name of therapeutics, demand the most rigid investigation, and elevate materia medica to the highest rank among the practical sciences.

If, then, pharmacologia has such important and exclusive objects, why overwhelm them with chemical, botanical, and physiological details, which have no necessary connexion with them? As well might we give a geographical description of the

country from whence a drug is brought, as a long botanical account of the plant that affords it; it is well to mention the active principles contained in a medicinal agent, but it is not the province of materia medica to detail the chemical processes whereby they may be separated. These are subjects belonging to distinct branches of knowledge, and the unnecessary intermixture of sciences is too apt to produce confusion of ideas.

One of the most unhappy consequences of the practice of introducing topics extraneous to pharmacologia into works professedly dedicated to this science, is that therapeutics, the most important of its divisions, is either overlooked, or treated with subordinate attention. We meet with the most elaborate description of a plant, an equally minute account of its chemical analysis, and the means of obtaining from it this or that vegetable alkalie; while its medical uses are shuffled over, by telling us that Mr. A. has found it very useful in one disease, and Doctor B. an absolute specific in another, while Doctor C. considers it sometimes beneficial, sometimes injurious in a third. Now, if the chief utility of materia medica consists in its guiding the physician or surgeon in the most certain and expeditious treatment of disease, what miserable trifling is this with a science which is capable of being made pregnant with blessings to the human race!

The Elements of Materia Medica by Mr. Pereira is a work, by this time, so well established in the favour of the profession, from its peculiar and great merits, that we feel the less hesitation in speaking freely of what we consider to be its faults. As a history of drugs, and compendium of pharmaceutical information, these elements stand unrivalled in the English language; as a monument of gigantic learning, to which every science has yielded its contributions, it reflects lustre on the nation which has produced it; and on no account is it more deserving of the highest praise than for its extreme accuracy; it would be a difficult task to detect a blunder or even a misapprehension in Pereira's Elements of Materia Medica. We wish we could here conclude our notice of this work; but entertaining, as we do, opinions of the high and intrinsic capabilities of pharmacologia as a distinct science, and that it requires no borrowed adornments from other branches of knowledge, but is rather obscured and injured thereby, we are forced to regret that this gifted author has entered into so many and so long natural historical and chemical details. It is true that these details contain much and valuable information; and we can well conceive the difficulty, for one whose learning is so copious and exact, to refrain from displaying his stores when an apparently favourable opportunity presented itself; but the difficulty of the restraint would have added to its magnanimity, and we believe

that the simplicity of science would have been served by such forbearance.

But we have a more serious charge to make against this work. We have already stated that the principal object of materia medica is "therapeutics." Now, we do not think that Pereira's Materia Medica fulfils this chief object. We admit, that under the heads of "Physiological Effects" and "Uses," there are contained much more philosophical digests, of what is known regarding the therapeutical employment of each medicinal agent, than can be found elsewhere in our language. Still, the reader gains no commensurate advantage from this; he becomes bewildered in the mist of authorities and details; the physician finds no clue to guide him to the means of combating whatever lesion, pathology, and diagnosis may have revealed to him; the armoury is abundantly supplied, but the weapons are not arranged according to their uses, but by the resemblance of their external forms, and no one knows where to look for a shield, or where for a spear. In fine, a classification is wanting; simple, intelligible, easily recollected; calculated to supply assistance in emergency, and leading to practical utility.

If we regret that the learned and accurate Pereira should have indulged too freely in the elucidation of extraneous topics, what shall we say concerning Dr. Bellingham's book, in which, as far as we have yet seen, there is much antiquated chemistry, much natural history, a little physiology, but out of which (although designated "Elements of Materia Medica") the part of "Materia Medica," like that of Hamlet, is omitted by *particular desire?* The chemistry and natural history of Mr. Pereira's work being drawn from the highest sources, and applied by one conversant with the existing state of these sciences, may be forgiven, notwithstanding the impropriety of the associations into which they are forced; but the substitution of meagre and incorrect representations of dynamic and natural science by an incompetent person, in place of a subject of such paramount importance as materia medica, is unpardonable. To justify the severity of this censure, we give in the subjoined note a few examples of the blunders contained in the "Elements of Materia Medica and Pharmacy" by Doctor Bellingham, together with their corrections.*

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* "The inorganic kingdom includes minerals, fluids, and gases."—p. 1.

"Owing to the sudden condensation of the two gases into a fluid."—p. 11.

When *fluids* are mentioned in these examples, *liquids* are meant.

We turn with pleasure to the admirable little Manual of Therapeutics by Doctor Spillan. This work supplies a want in

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"Some of the acids, at the ordinary temperature of the atmosphere, are in the form of gas, as the carbonic, hydrosulphuric; others are fluid, as the nitrous.—p. 78.

"The same elements with the exception of copper and aluminum, are met met with in the animal kingdom."—p. 4.

Sarzeau detected copper in the blood; and Herberger in cod oil.

"Oxygen combines, or may be made to combine, with every simple substance in nature."—p. 5.

Except fluorine.

"By combining in different proportions with the same element, it may form both an oxide and an acid; but it never, with the same elementary substance, forms an acid and an alkali."—p. 5.

Nearly all compounds containing oxygen are capable of acting either as acids, or bases, according to the nature of the substances they are combined with.

"The union of oxygen with some bodies at a high temperature, is termed combustion; it is nothing more than rapid oxidation, with evolution of heat and light."—p. 5.

Any chemical combination with evolution of light and heat is combustion.

"When compounds containing oxygen are decomposed by voltaic electricity, the oxygen is evolved in the gaseous state at the positive pole."—p. 6.

This depends on the nature of the electrode; if it have a strong affinity for the oxygen, the latter is not evolved.

"Nitrogen gas can also be obtained from a mixture of fresh muscular fibre, and diluted nitric acid, subjected to the action of a moderate heat in a glass retort; in this case the nitrogen is derived partly from the animal matter, and partly from the acid."—p. 7.

Contrary to the opinion of Berzelius, who regards the nitrogen as being derived solely from the animal matter; no binoxide of nitrogen (which always proceeds from the decomposition of nitric acid) being evolved.

"It (nitrogen) is also a constituent of all animal matter, except fat and bone."—p. 7.

Bones contain nitrogen in all stages of their growth.

"Atmospheric air, like other gaseous bodies, expands by heat. Between 32° and 212° of Fahrenheit's thermometer, it expands to about one-third of its volume; 1000 cubic feet at 32° dilating to 1375 cubic feet at 212°; at a temperature of 62°, it is about 815 times lighter than water, and 11,065 times lighter than mercury; 100 cubic inches of it weighing 31,0117 grains."—p. 8.

We have here a strange collection of errors. 1000 cubic feet of air at 32°, dilate to 1365° at 212°. Air must be 814 times light than water, and 11022,6 times lighter than mercury at 62°, if 100 cubic inches, at the same temperature, weigh 31,0117 grains. But these mistakes (except the first) are all explicable by referring to Graham's Chemistry, where we find, p. 272, the following: "According to the careful experiments of Dr. Prout, 100 cubic inches of atmospheric air, deprived of aqueous vapour, and the small quantity of carbonic acid it usually contains, weigh 31,0117 grains, at 60°, and 30 Bar. Hence, at 62°, air is 815 times lighter than water, and 11,065 times lighter than mercury."

English medical literature, and, in connexion with Mr. Pereira's treatise, fulfils the limits of materia medica. We do not

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"The hydrogen, however, procured in this way is seldom quite pure, owing to the iron and zinc of commerce being always contaminated with minute quantities of carbon and sulphur."—p. 10.

The errors on the opposite side result from inverting the matter contained in the foregoing extract. The fact is, that air at 62°, weighs, for every 100 cubic inches, 30,893 grains.

We think "arseniuretted hydrogen" is an impurity that deserved mention.

Speaking of water, "its elasticity is considerable, and though very incompressible, it yields in a perceptible degree to pressure."—p. 12.

This passage we shall leave without comment.

"At the temperature of 32°, water is converted into a solid."—p. 13.

Not when at rest.

"Chlorine can be procured by the decomposition of hydrochloric or muriatic acid (a compound of two equivalents chlorine, and two equivalents hydrogen), by means of the peroxide or black oxide of manganese, and a moderate heat."—p. 13.

We had thought that hydrochloric acid, was a compound of one equivalent of chlorine, and one of hydrogen.

"Chlorine possesses the remarkable property of removing the colour of *organic substances;* and Sir H. Davy has proved, that this effect does not take place unless *water* is present. In its perfectly dry state, chlorine produces no change upon dry vegetable colours, but when water is added it bleaches them, and is extensively employed in the arts for this purpose; its decolouring power, therefore, is not direct, but dependent upon its affinity for hydrogen, by which it decomposes the water, and combines with the hydrogen to form hydrochloric acid, while the nascent oxygen of the water produces the bleaching effect."—p. 17.

"Perhaps the most important character of chlorine, and certainly that upon which its value in the arts depends, is its power of removing the colour of organic substances; its bleaching properties. Formerly it was considered that water was necessary for this bleaching, and that the chlorine combined with the hydrogen, whilst the oxygen of the water being thus thrown upon the organic substance, oxidized it, and formed a new body, which was colourless. I have shown, however, that this is not the case, but that the chlorine entered into the constitution of the new substance formed, sometimes replacing hydrogen, at others simply combining with the coloured body," &c.—*Kane's Chemistry*, p. 493.

"It (bromine) is about three times heavier than water, very volatile, boiling at about 116°, and affords a vapour similar in colour to peroxide of nitrogen."—p. 22.

The second extract explains what is meant by peroxide of nitrogen in the first; and as the vapour of bromine is red, the reader is led to infer, that peroxide of nitrogen is red also. This gas, however, happens to be colourless.

"Nitric acid oxidizes and dissolves it (mercury), with disengagement of peroxide of nitrogen."—p. 68.

"Hydrate of soda, when exposed to the air, *effloresces*, hydrate of potash, under the same circumstances, *deliquesces*."—p. 39.

Both hydrates deliquesce.

agree with Doctor Spillan in considering therapeutics as a distinct science from materia medica; but we perfectly agree with

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"Ferrocyanuret of potassium (yellow prussiate of potash) throws down a white precipitate of ferrocyanuret of the protoxide (of iron), which becomes blue by exposure to the air."—p. 50.	The precipitate is a cyanide of potassium and iron, without any oxygen.
"Ferrosesquicyanuret of potassium (red prussiate of potash) throws down a deep blue precipitate of Prussian blue."—p. 50.	The precipitate is *Turnbull's blue.*
"Sulphocyanic acid, and sulphocyanuret of potassium, produce a blood-red precipitate (with persalts of iron), and meconic acid, a wine-red precipitate."—p. 51.	There are no precipitates whatever produced with these re-agents.
"The alkalies precipitate the sesquioxide (of antimony), but re-dissolve it when added in excess."—p. 57.	The alkalies do not re-dissolve it.
"Protoxide of copper is a brownish black powder, which requires a very high temperature for fusion, is insoluble in water; soluble in ammonia, with which it forms a deep blue solution, and in most acids."—p. 62.	Protoxide of copper is not soluble in water of ammonia.
"Ferrocyanuret of potassium produces a reddish-brown precipitate of ferrocyanuret of the protoxide," (of copper).—p. 63.	The precipitate is ferrocyanuret of metal, not of the protoxide.
"Hydrosulphuret of ammonia, and hydrosulphuric acid gas, produce dark brown or black precipitates of sulphuret of the protoxide" (of copper).—p 61.	There is no such thing known as sulphuret of the protoxide of copper.
"Ammonia and carbonate of ammonia throw down white precipitates; a double salt of ammonia, and peroxide of mercury."—p. 70.	There is not a particle of oxygen in the dried precipitate.
"But one metal, arsenic, forms acids, and not an oxide by its union with oxygen."—p. 75.	Tellurium does the same.
"The term *sesqui* is also used to designate an oxide which has little or no tendency to unite with acids, and which contains *less* than one atom of oxygen, to one atom of the metal."—p. 75.	Many sesquioxides have a very great tendency to unite with acids, as sesquioxide of iron, and alumina, and their composition is one and a half atom of oxygen, to one atom of metal.
"The metallic oxides are distinguished by the property of combining with acids, to form salts."—p. 76.	All bases unite with acids to form salts, as well as metallic oxides.
"Hence, has arisen a division of acids into oxacids and hydracids. This classification is founded upon the assumption, that the oxygen and hydrogen are the two acidifying principles. Oxacids are composed of oxygen and an acidifiable base; and hydracids, of hydrogen and an acidifiable base."—p. 77.	This obsolete classification has been long since exploded. There is no acidifiable principle that is not an alkalifiable principle.

him, that in these kingdoms it has not been treated as its most important department. We shall devote the remainder of this

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"Most of them (the alkalies) are decomposed by a strong red heat. Ammonia alone has a strong smell, and exists in the form of gas; the rest are all solid."—p. 80.	Coneia has a strong smell, and it, as well as some other vegetable alkalies (which are intended in the extract), are liquid.
"A salt is a definite compound of an acid and an alkaline, or salifiable base, in which the properties of each of these bodies are neutralized, and the resulting compound possesses neither the character of an acid, nor of an alkali, but chemical and other qualities distinct from either."—p. 82.	Many salts possess acid, and others alkaline characters.
"Gum is yielded only by *dicotyledonous plants.*"—p. 92.	Salep, a substance principally composed of gum, is obtained from Orchideous plants.
"Arabin is thrown down from its solution in water, as a white precipitate by a solution of acetate of lead."—p. 94.	It is not.
"And mannite, with which mushroom sugar is identical; and sugar of milk—which are not susceptible of the vinous fermentation."—p. 98.	Mushrooms contain mannite, but mannite is not identical with mushroom sugar: again, sugar of milk is capable of vinous fermentation, where caseine is employed as the ferment; the Tartars prepare an intoxicating liquor from mare's milk.
"When examined by the microscope, starch is found to be composed of rounded grains of variable form and dimension, each grain consisting of a membranous coat, enclosing a transparent colourless liquid."—p 100.	This description, originating with Raspail, has been long since proved to be erroneous by Guibourt. The grains consist of concentric layers, increasing in density towards the circumference.
"Emulsin is a peculiar principle which exists in sweet almonds in much greater abundance than in gluten."—p. 103.	This does surpass our comprehension.
"Those composed of resin, volatile oil, and benzoic acid, are termed true balsams. The true balsams contained in the pharmacopeia are Balsam of Peru. Balsam of Tolu. Benzoin. Storax."—p. 118.	The balsams of Peru and Tolu do not contain any benzoic acid.
"Maceration is an operation chiefly confined to vegetable substances, in which the soluble parts are partially or entirely dissolved by steeping them in a fluid at the ordinary temperature."—p. 136.	The Dublin Pharmacopœia directs maceration to be performed between 60° and 90°, and digestion between 90° and 100°.
"Digestion differs from maceration only in a gentle degree of heat (from 60° to 90°) being employed."—p. 137.	

notice to a consideration of the subjects examined in Doctor Spillan's work.

"Metallic oxidation is an example of chemical combination, promoted by the elevation of temperature, although the heat is not so high as to produce fusion. In this way the red oxide of mercury and the oxide of zinc of the pharmacopœia are prepared."—p. 137.	If the heat be not so high as to produce fusion, it is high enough to produce vaporization in the examples cited.
"Deflagration is a kind of metallic oxidation, in which a metallic substance is exposed to a red heat, mixed with nitrate of potash."—p. 138.	It appears to us that the explosion of gunpowder is an instance of deflagration; likewise the increased combustion produced by saltpetre placed within the fire; nevertheless, we cannot perceive in these, examples of metallic oxidation.
"The crystallization of a saline solution is assisted by rest."—p. 143.	On the contrary, it is impeded.
"The indigenous seeds contained in the British pharmacopœias are not numerous; those of the aromatic umbelliferæ, which abound in volatile oil," &c. —p. 147.	Those are the fruits and not the seeds of umbelliferous plants.

It would occupy too much space, and would not be very edifying to continue the above list: we may remark, however, that scarcely is there a chemical equivalent in the whole book given correctly; thus, chlorine is said to be 35·42, in place of 35·47; potassium 39·15, in place of 39·3; iron 28, instead of 27·18. *Experimenters* vary as to the combining proportion of iodine; Berzelius makes it 126·567, Graham 126·57, Kane 126·6; it is in this book stated to be 126·3.

The chemical composition of organic substances is almost always wrong; thus, starch is stated to be $C_7 H_6 O_6$, its true composition is $C_{12} H_{10} O_{10}$; Lignin is described as $C_{15} H_{10} O_{10}$, it should be $C_{12} H_8 O_8$. In a list of thirteen alkaloids whose composition is afforded, only one happens to be correct.

The information presented on natural history, including botany, is of the same doubtful nature as that on chemistry and pharmacy; thus, we are told, "the flowers of the Compositæ, as the Anthemis nobilis, and of others whose calyx is odorous, are collected along with the perianth;" the "flowers" in the foregoing extract mean the capitula; the "calyx" means the involucrum; and we cannot conceive what is meant by the "perianth." The characters of the families of plants, abridged from Lindley's work, have frequently the most important omitted; thus, there is no mention of the Papaveraceæ having a milky juice. The nature of the anthers in Cucurbitaceæ is not mentioned; the three parietal placentæ in Violaceæ are passed over without notice, as well as the valvate estivation of the calyx in Malvaceæ; the nature of the embryo in Caryophilleæ; the axial character of the odd sepal in Rosaceæ, and its being abaxial in Leguminosæ; the position of the dissepiment as respects the rachis in Gentianaceæ and Scrophularineæ; the nature of the stigma in Apocyneæ; the extrorse anthers in Irideæ and Colchicaceæ; the abhilose radicle in Smilaceæ, &c.

Any error contained in Lindley's work is sure to be copied; thus, a *pepo* is described as being "a fleshy succulent fruit, one celled with three parietal placentæ;" this conveys an erroneous idea of its structure; it is really composed of three extro-flexed carpels, united by their dorsa in the axis, and with their many-ovuled margins discrete, surrounded with pulp, and contained within the persistent tube of the calyx.

Dead substances possess no properties that are not either mechanical or chemical, and medicines being within this category, present no exception to the rule. In accordance with this, we find that medicinal agents are generally possessed of more or less chemical energy; in the inorganic kingdom, water, which is nearly neutral in its chemical relations, is equally inert in its action on the tissues; and in the organic, it is not the gums, sugars, starches, fixed oils, and other proximate principles of a neutral nature, which possess medicinal activity, but the vegetable acids and alkalies.

But, although it is their mechanical or chemical properties that enable medicines to act, still it is not the less true, that in the alleviation or cure of disease, they, for the most part, do not operate either chemically or mechanically. In those rare instances, where a chemical action is produced, the remedial efficacy is not felt by those parts with which the caustic or escharotic has had contact; but is produced by the vital reaction of tissues, by them untouched; and there is no doubt that, in the majority of cases, the effects of medicines result from a living modification, induced by the presence of a chemical or mechanical agent, and not by the chemical or mechanical action of that agent.

From hence results the necessity of studying the vital actions, induced by medicines, in health and in disease. Some medicines increase life, others diminish it, and there is reason to believe that others are capable of altering it without either increase or diminution. Inasmuch as each tissue possesses an especial power of nutrition, it follows that in each the character of life must be peculiar. Dutrochet found that roots, exposed

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There are also many original blunders; thus, the petals of Cruciferæ are said to be "deeply clawed," while all those with siliculose fruit have very short claws; the ovary of Caryophilleæ is said to be inserted on a "torus;" now, torus was a name given by Salisbury to the receptacle of the flower; it is used in this sense by De Candolle; sometimes it is applied to the fleshy ring situated on the calyx, and from whence the stamin and petals are exserted, as in Rosaceæ and Myrtaceæ; but it is never used as synonymous with "anthophorum," D. C. the organ alluded to, and which, at the best, can only be considered as a prolongation of the torus. Again, the Rosaceæ including Pomeæ are said to have "superior ovaries," although the calyx in Pomeæ is adnates, and the fruit is said to be sometimes nuts containing several seeds; they are always few seeded. The fruit in Urticaceæ is described to be "an indehiscent nut or achenium, surrounded by the calyx, &c., or (as in the fig) a fleshy receptacle enclosing numerous nuts," although among the four examples cited, in two, it is neither one nor the other, being a strobile in Humulus lupulus, and a sorosis in Morus nigra. We may remark, that the specific names of plants throughout the book are invariably commenced with capital letters; this is exceedingly unscientific. We have devoted too much space, however, to the examination of this book.

to light, acquired a green colour, and tended to an upward growth. Who will say that these roots, in taking on the life of stems, suffered either an increase or diminution of vitality.

The vital reactions induced by medicines may be either local or remote. We strongly recommend for the perusal of our readers the admirable chapter on the *modus operandi* of medicines, contained in Dr. Spillan's work. To enable them to appreciate the value of this chapter, we shall extract the laws, which the author lays down, as necessary to justify us in the conclusion that medicines act by absorption.

" 1. If the medicinal substances are found in the blood.

" 2. If medicines are found in the secretions and excretions."

" 3. If the substances employed are found in the solid parts of the body.

" 4. When, after the application of a medicinal substance, the effects of the same on remote organs do not follow till a late period, and in every case perceptibly later than the local effects.

" 5. When, on the application of a medicinal substance, neither structural nor functional changes occur at the place of application, but, on the contrary, considerable effects are produced on remote organs.

" 6. When a medicinal substance, no matter how various the forms and ways in which it may be applied, always produces the same phenomena.

" 7. When one and the same medicinal substance given in the same dose does not produce stronger remote effects proportioned to the importance of the organ to which it may be applied.

" 8. When one and the same medicinal substance produces sometimes greater, sometimes less effects at the place of application, and when these do not produce corresponding remote effects; that is, when intense local effects are not followed by equally intense phenomena in remote organs, but, on the contrary, the more intense the remote effects are, the less the local symptoms are found to be.

" 9. When a medicinal substance, applied to a part or organ whose nervous connexion with the rest of the body is cut off, still exerts its influence on this, and with it also on the central parts of the nervous system.

" 10. When the nervous communications continuing perfectly entire but the circulation of the blood being cut off in a part of the body, a medicinal substance applied to this part produces no action on remote organs.

" 11. When a medicinal substance, after local application to a wound, produces no action on remote organs, so long as its absorption is impeded by any means, but on the other hand acts, if nothing interferes with its absorption.

" 12. When the activity of a medicinal substance is diminished, nay perfectly destroyed, by an artificial plethora.

" 13. When a substance applied to parts not furnished with

nerves, yet produces effects in distant organs, even when locally no change of structure whatever is observed.

" 14. When medicinal substances introduced immediately into the blood act in just the same way as when they are taken internally, or exhibited in any other way.

" 15. When a medicinal substance gradually disappears at the place of application, that is, absorbed, and occasions in distant organs effects which correspond with the disappearance of the medicinal body."

Each of the above rules is illustrated by examples, for which we refer to the work itself.

But medicines not only act by absorption, they also act by sympathy.

" When a medicinal substance has produced considerable local changes of structure or function, sympathetic effects, to a greater or less extent, must also necessarily be produced in remote organs."—p. 87.

Our author likewise furnishes us with rules how to judge when medicines act by sympathy.

" 1. When the remote action of a medicinal substance is a sympathetic one, this must correspond in strength with the local action.

" 2. The remote action, in case the nerves are the means of conduction, becomes so much the more intense, the more important the organ is which is locally affected by the medicine.

" 3. A sympathetic action, which would manifest itself in a remote organ, may be, in part at least, avoided, by cutting off the nervous connexion between the place to which the substance is applied and the rest of the body.

" 4. The remote effects occasioned by consensus of the nerves, and which are solely the consequence of the local medicinal action, follow always immediately after the local action, cannot take place without this, are not prevented by an artificial plethora, &c."

On what does the curative influence of a medicine depend? This will always be an interesting problem in therapeutics; it is not, nevertheless, without its solution. The following propositions on this subject are truly excellent:

" 1. That every medicinal substance possesses in itself an active property, residing in the chemical principles which constitute it, and which is called forth as often as the substance is brought in contact with some part of the living body; the existence and nature of this property being ascertained by the changes it produces in the state and functions of the organs.

" 2. What is called the secondary or curative property is not, then connected with the material quality of the substance, nor dependant on its chemical composition; such property being but a

mere fiction of the mind, intended to explain the beneficial results produced by such agents.

" 3. The immediate or primary effects of a medicine are always sure to take place whenever such medicine is employed ; if any difference should occur, it will be in degree, not in kind. Thus an excitant will always stimulate tissues, purgatives will always irritate the intestinal surface.

" 4. The curative effects are not thus constant and uniform. How often do we see the medicine which passes as the most efficacious in some particular disease disappoint the physician's expectation, and, instead of giving rise to the favourable results which his experience in its use had led him to hope for, produce effects of an entirely opposite kind ! It is this uncertainty in the curative effects of medicines to which Hoffman alluded, when he said that the same medicine, employed in the same diseases, with the same precautions, in the same dose, and at the same time, proved serviceable to one patient, useless to a second, and injurious to a third.

" It may be asked whether there are such things as absolute tonics, that is, agents whose employment always and uniformly produces increase of vigour in the system, perceptible to the individual, and causing a freer and easier performance of the functions ? The answer is, that no substances exist endowed with such a power. In this question it is evident that it is no longer the primary or immediate effect of the medicine that is contemplated, but an effect which no remedy can produce constantly and in all cases. Such an effect will always remain conditional, and refers to the secondary or therapeutical effects. If by absolute tonic be understood a substance capable of occasional fibrillary contraction in the organs, and of thereby increasing their organic vigour, we might refer to bitters, gentian, or quassia, the employment of which never fails to develope tonicity in the several tissues. If, in irritation or inflammation of the primæ viæ, these substances excite nervous symptoms, debility, depression, &c., they always act in the same way ; but, in such a case, their operation augments and exasperates the existing lesion ; it is, in fact, injurious.

" 5. The active property of a medicine is always the same ; it never occasions a medicinal effect different from that which is the natural and usual consequence of its composition. Here, again, we must beware of confounding the secondary effects with the primary product of the impression of the medicinal substance. Thus, a medicinal substance possesses an emollient property ; it relaxes the organic tissues, and diminishes the quantum of vitality ; yet there are some cases where one would consider it endowed with an opposite property, where, in fact, it produces a strengthening result. When, in inflammatory diseases, and especially in membranous inflammations, there is depression, prostration, and absolute sinking, an emollient drink soon restores the patient to his strength. Now, it is evident that this beneficial result is a secondary or therapeutic effect. This emollient, demulcent medicine, by its intrinsic virtue,

abated the violence of the inflammation, and reduced the irritation of the circulating system; the improvement obtained in the condition of the patient proceeds from this operation.

" In the same way, sulphate of quinine has been known to produce hypnotic effects. A person has been known to experience, every night immediately after going to hed, a febrile paroxysm, which kept him awake the entire night. This state continued for a considerable length of time, notwithstanding the employment of opium. The patient was directed to take six grains of the quinine three hours before going to bed. From the first day he adopted this treatment, he slept well during the night. Are we to conclude from this that quinine is a narcotic? Certainly not; it merely removed a febrile movement which was periodical in its attacks, and so drove away the sleeplessness depending on it.

" 6. The curative or therapeutic effects possess not the unity of the primary or immediate effects. Experience shows us that the curative virtues of one and the same medicinal substance may be very various; it may be febrifuge, antispasmodic, tonic, sedative, &c."

" Health," said Broussais, " consists in the regular performance of the functions, disease in their irregularity, death in their cessation." But he was wrong when, in his next proposition, he stated, that " the functions are irregular when they are performed with too great or too little energy;" their irregularity is sometimes independent of either increase or diminution of vitality. The means of cure act in an opposite direction to the causes of disease. The science of therapeutics enables the physician to avail himself of the secondary effects of medicines, in combating those dynamic aberrations which constitute or produce lesions.

As medicines cure disease, by operating on those lesions which compose it, it is important to distinguish those that are curable from those that are incurable; and inasmuch as a disease is seldom confined to a single lesion, to determine the order in which we should subject a complication, to appropriate treatment. Thus in phthisis there may be deposition of tubercle, irritation, phlogosis, ulceration, suppuration, &c. Medicines cannot be expected to act on tubercle, which is placed out of the influence of sympathy or circulation; of the others, irritation is the most amenable to remedies, and its removal may facilitate the treatment of the remainder. But the lesions that are present in the same disease are constantly liable to vary, in accordance with age, temperament, habit, and many other circumstances; so that there can be no specific for the cure of any disease. This subject is very well treated in the eighth chapter of the work before us, and is well characterized in the motto quoted from Hufeland: " The physician should generalize the

disease as much as possible, and individualize the patient as much as possible."

This work has another motto, taken from Rostan, and equally excellent: "Medicine consists entirely in the science of indications, the first and most important of which is the knowledge of the seat and nature of the disease to be treated." But, unfortunately, neither pathology nor diagnosis is as yet sufficiently advanced to enable us to determine in every case the lesions which may be present. In such cases the physician must rely on other indications. We extract the following from page 43, where, after describing those indications which point to an antiphlogistic treatment, the author says:

"We may now consider those morbid phenomena which, *in general*, demand or warrant a tonic and stimulating plan of treatment. They are almost all directly opposed to the preceding; they are,

"Absence of thirst; paleness, or dark brown colour of the tongue, unaccompanied by dryness; a mucous or thready coating of this organ; slow digestion; flatulent state of the abdomen:

"Weak, small, and soft pulse; sluggishness of the capillary circulation; depression of the superficial veins; poverty of the blood; large quantity of serum in it; obscure and weak pulsations of the heart:

"Difficulty of breathing, arising from weakness of the organs of respiration; coldness of the expired air, which in some cases exhales a fœtid odour; coldness of the whole body, or merely of the extremities:

"Increased serous exhalation; infiltration of the cavities and of the extremities; urine pale and cold, and difficulty in voiding it; marasmus:

"Prostration and languor evinced in the attitude; difficulty in moving, and unwillingness to exertion; softness and flaccidity of the flesh; features small and contracted; cavities small; paleness and lividity of the skin, on which spontaneous ecchymoses are frequently observable; dulness of the eyes, heaviness of the eyelids, which are frequently half closed:

"Weakness of the voice; general insensibility, stupor, drowsiness; the signs characterizing the chlorotic state, &c.

"Such are the signs which usually incline the medical practitioner to employ tonics and stimulants in treating the diseases of females; yet as some of these signs may depend on concentration of strength, we should expose ourselves to the risk of committing serious errors, if we did not use all our care in forming a correct judgment in individual cases. It must also be borne in mind, that these various morbid phenomena are far from presenting themselves combined in the same individual; the more of them, however, we find united in a given instance, the more value will they have, and the more influence should they exert in directing and deciding the treatment."

We have now given the reader a sufficient opportunity of judging of the value of Doctor Spillan's manual. It is a valuable boon both to the practitioner and student; and we have only to regret that the author has not always acknowledged the sources from whence he drew such ample stores of valuable information.

Gatherings from Graveyards, particularly those of London, with a concise History of the Modes of Interment among different Nations, from the earliest Periods; and a Detail of dangerous and fatal Results produced by the unwise and revolting Custom of inhuming the Dead in the midst of the Living. By G. A. Walker, Surgeon. London, Messrs. Longman, Rees, and Co.

Public attention has, in an especial manner, of late years been directed to those causes which vitiate the general atmosphere, and to the great injury which results to the health of the community from its holding in suspension a solution of various noxious effluvia which emanate from the earth. A great mass of evidence has been elicited by various parliamentary committees, and distinguished writers conversant with the subject which they treated, have also brought forward a great variety of facts and observations, all tending to show that the preservation of health in a preeminent manner depends on the purity of the air which we inspire, and that mortality keeps pace with the existence of those agencies which contaminate the atmosphere. When we proceed to investigate the health of prisons or factories, when we visit the dwellings of the poor, and the confined filthy alleys and lanes of large towns, we always find that disease and death flourish most in those places where least attention is paid to cleanliness and ventilation, and that as decaying animal and vegetable substances and other species of filth are permitted to accumulate, so also will disease become most prevalent in such hotbeds of infection. It must seem curious that such perfect indifference should prevail on so important a subject.

"No danger," says our author, "seems to be dreaded, no fear excited, no apprehension even entertained of the injurious and destructive agencies which are constantly in operation, and armed with invisible and irresistible power."

Mr. Walker, in the work now before us, treats more especially of the fatal consequences which result from the inhumation of the dead and of the mortality which is produced by emanations from graveyards, more especially from those in the metropolis.

"It would not be difficult to show," says he, "that some of the most afflictive visitations of Providence have originated in the contamination of the atmosphere from putrefying animal substances; and that to the neighbourhood of the 'GRAVEYARD' may be attributed the violence, if not the origin, of some of the most destructive diseases which have depopulated the human race." * * * "Burial places in the neighbourhood of the living are, in my opinion, a national evil; the harbinger, if not the originators, of pestilence; the cause, direct or indirect, of inhumanity, immorality, and irreligion. These remarks may appear extravagant and untenable. I have to request an attentive and impartial perusal of the following pages; the proof will be found convincing; the justification complete. The peculiar character and virulence of diseases in the proximity of graveyards, first excited my suspicion; evidence, positive and circumstantial, has established the fact, that the miasmata from animal putrescency may occasion not alone the instantaneous loss of human existence, but increase the intensity of pestilential diseases.

"Every member of society is interested in the statement, that in the metropolis and in very many towns and villages of the empire, the abodes of the dead are insecure. By far the greater number of graveyards are crowded to excess."

Such are the premises laid down by our author, and it is but justice to him to say, that he has fulfilled the promises put forward in his title page with great ability and research. In his work will be found a comprehensive history of the modes of interment among different nations from remote antiquity. That formerly, in many countries, the danger to be apprehended from the burial of the dead in the neighbourhood of the living, was fully appreciated, and the practice of doing so was rigidly restrained by coercive laws. An account is then given of the gradual infringement of the wise restrictions of antiquity; the extent to which the infringement was carried, and the extremely fatal consequences which resulted. Our author also details and explains the nature and effects of the various deleterious products of human putrefaction. The opinions of medical writers and men of science, and the experiments upon which those opinions were founded, are closely and accurately detailed. The description and state of some of the burial grounds in London, and the direful consequences attendant on their vicinity to the abodes of man, are correctly and impartially recorded, and a great variety of facts are detailed which fully bear out the opinions of the author. The abuses of interment—abuses which afflict while they disgust—are exposed and reprobated, and the book concludes with a few general reflections well calculated to excite public attention. In conclusion, we earnestly recommend it to the careful perusal of those who possess influence to remove the evils which it details.

SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

Session 1841.

Eighth Meeting, January 23rd, 1841.

Sir Philip Crampton, Bart., in the Chair.

1. *Melanosis.*—Doctor M'Donnell laid before the Meeting a series of preparations, showing melanotic depositions in the thoracic and abdominal viscera, as well as in other organs and tissues. The subject of the case was a baker by trade, thirty-seven years of age. On admission into the Richmond Hospital, he stated that several years previously he had received a severe blow on the left eye, followed by swelling, ecchymosis, and dimness of sight; from which latter affection he never recovered. About five months since, when he entered the Richmond Hospital, he complained of pain in the eye, and stated that he had been suffering from it for about twelve months. At this time there was a small tumour resting on the upper part of the globe of the eye; he had constant burning pain in the eye, and occasional attacks of lancinating pain. From a conviction of the malignant character of the disease, extirpation of the eye was proposed, but the patient would not submit to the operation, and soon afterwards left the hospital. He returned about three months afterwards, the eye being now completely disorganized, and forming a large tumour, projecting from the orbit. His health at this time was apparently good, and he made no complaint except of the eye. About a month since, he began to exhibit all the symptoms characteristic of malignant organic disease. The liver had attained a very great size, extending far below the margin of the ribs. He suffered greatly from hæmorrhage from the tumour of the eye, and also from pains in the jaws, temple, and side of the head; he had also constant pain in the abdomen, sometimes mild, sometimes acute and violent. He was then attacked with œdema of the feet and ascites, and died completely worn out by his sufferings. On examining the affected eyeball, it was found to be converted into an encephaloid structure, intermixed with a small portion of melanotic matter. All traces of the natural appearance of the eye had disappeared; and yet five months previously, when the

man entered the hospital for the first time, the eye appeared natural. On opening the thorax, several depositions of melanotic matter were seen upon the heart; and when the organ was opened, melanotic tubercles were also seen in the ventricles and auricles beneath their lining membrane, but in much greater number in the right than in the left cavities of the organ. The lungs were filled with small round tumours, surrounded by a cyst, and filled with melanotic matter. Every organ, in fact, was diseased, with the exception of the brain; there was atrophy of the right optic tract, but the brain itself was free from disease. The lungs, heart, liver, kidneys, spleen, mesenteric glands, peritoneum, and the absorbent glands along the course of the great vessels, all presented specimens of melanotic degeneration. The liver presented a very singular appearance; during life it extended down as far as the umbilicus, in the mesial line, while a projection from it descended as low as the iliac fossa on the right side. This had given rise to a mistake in diagnosis during life, the disease in this situation being supposed to be developed in the mesentery. Two prominent tubercles could also be distinguished on the anterior surface of the liver through the abdominal parietes. On making a section through the liver, a large quantity of melanotic matter was brought into view; and on attentive examination of the tumours, it appeared that the melanotic matter had been diffused through the substance of tubera circumscripta previously developed. There were several of these masses in which a process of change was going on similar to that in the case recorded by Cruveilhier, and in which also the disease commenced originally in the globe of the eye. In many of these tumours a small quantity of melanotic matter was diffused through the encephaloid tubercle; while in others the whole of the tumour appeared to consist of melanotic matter; the latter were in general small. In the spleen a small quantity of the same black substance was found between the capsule and the substance of the organ. The pancreas also exhibited a number of these tubercles; there were several small ones under the mucous membrane of the stomach, and the peritoneum was studded in various places with them. The appendices epiploicæ, and the whole of the mesentery, presented a very curious appearance, being mottled over with minute glossy spots. The melanotic tubercles, properly so called, were of a small size, varying from a minute speck to the size of a hazel nut. On the under surface of the diaphragm, the melanotic matter formed a kind of lamina or plate, being extensively effused between the peritoneum and muscular substance, so as to form a thin continuous layer. The glands, which accompany the large blood-vessels, were loaded with it. It was also scattered over the supra-renal capsules, and between the substance and fibrous capsule of the kidney. There were two points connected with the case which seemed of importance. One of these referred to the caution necessary to be used in proposing an operation, in cases of malignant disease. Dr. M'Donnell said he felt quite convinced, that at the time the operation had been proposed in this case, the seeds of the disease

had been already developed in the internal organs. One of the most prevalent ideas with respect to melanosis is, that it is the result of an effusion of blood altered in its vital qualities, and containing a large quantity of colouring matter. Dr. M'Donnell did not think that this opinion was borne out by the circumstances of the case under consideration. In the first place, there was a total absence of melanotic deposition in the brain; and where it occurs in the parenchymatous tissue of organs, as for instance in the lung, it does not present any of the distinctive characters of effused blood. In addition to this, it might be urged, that it was not found loose in cavities, as so frequently occurs in other hæmorrhagic effusions. And, if the preparations laid before the Society were minutely examined, even the very smallest of the tumours, and those which were most recently deposited, would be found to exhibit, in an exquisite degree, all the characters of melanotic matter; and in none of them could be discovered anything like a state of transition from blood to melanosis. (*Museum, Richmond Hospital*).

2. *Pericarditis.*—Dr. Law exhibited a series of specimens of pericarditis, illustrative of the cases in which the sign of frottement is present, and of those in which it is absent; and also showing the conditions necessary for its production. The first case was that of a woman, aged thirty-seven, who had been under his care for phthisis. Her symptoms at first appeared to be those of bronchitis; but a more accurate examination convinced Dr. Law that she was labouring under phthisis, although the signs of the latter disease were considerably masked by those of the former. After some time she became much worse, respiration became more difficult, and she complained of præcordial oppression. On examination, Dr. Law discovered distinct frottement masking both sounds of the heart; it was heard over the entire præcordial region, and over the lower part of the sternum. The patient's health was in such a weak state that no active measures could be taken, and the friction sound continued quite distinct for several days. About the end of a week it passed gradually into a sound resembling bruit de scie, and then disappeared, leaving behind a stronger action and impulse of the heart than usual. The diagnosis then made was pericarditis, terminating in adhesion. The woman died shortly after; and, on dissection, the pericardium was found to be adherent to the heart, except at a small spot posteriorly. Dr. Law said, that for the next case he was indebted to the kindness of Dr. William Beatty. The patient was a young female, aged sixteen, who had been under Dr. Beatty's care for amennhorrœa. She afterwards came under his care as a patient in the Whitworth Hospital for an attack of pneumonia, for which she was blooded, and put under the influence of mercury. During the progress of the disease, he discovered frottement over the region of the heart, and directed Dr. Law's attention to it. On laying his hand over the region of the heart, the sensation was felt as if two smooth and dry surfaces were rubbing against each other. The young

woman, being at this time in a very feeble state, could not bear anything like active treatment, and sunk rapidly. A post-mortem examination was made, and the specimen which he was about to submit to the Meeting was the result. There was no adhesion between the pericardium and heart; but their opposed surfaces were covered with a smooth coating of fine reticulated lymph. There was no fluid in the pericardium. The next case brought forward by Dr. Law was that of a woman, who had been admitted some time since into Sir Patrick Dun's. She had been confined in Dr. Beatty's lying-in hospital, and remained there for some time labouring under an attack of paralysis of the lower extremities. During her stay in hospital, she was engaged in taking care of the children; and after sitting up at night with a delicate child she was seized with rigors, followed by pain between the shoulders, and was admitted into Sir Patrick Dun's Hospital nine days afterwards. Her pulse was then 150 and small; her tongue red and dry; her countenance anxious; she had bilious diarrhœa and cough, with pneumonic sputa tinged with blood. Both lungs were dull on percussion posteriorly, and the respiratory murmur was absent over an extensive space. The day after she came to hospital an erysepelatous blush appeared on her left wrist, and the right knee became swollen and painful; in a word, it was evident that she was labouring under diffuse inflammation. She died five days after admission. On opening the thorax, the heart presented itself immediately behind the sternum. The pericardium was considerably distended, and when opened was found to be filled with purulent matter, and both layers of the membrane were coated with lymph. During life this woman had been frequently examined, but no sound of friction could be heard over the region of the heart. In consequence of the extensive effusion of pus, the opposed surface could not come into contact, and the consequence was, that frottement was absent. The last case was that of a deaf and dumb girl, who was under the care of Dr. Beatty in the Whitworth Hospital. Dr. Beatty had requested Dr. Law to see her, as he had heard the sound of friction over the region of the heart while making an examination of her chest. Dr. Law examined the chest, but could not detect anything, except a stronger action of the heart than natural. The girl appeared to be labouring under phthisis, and to have had empyema of the left side at some time previously. The case seemed to be one in which the empyema had been removed, but in which the patient had not recovered fully in consequence of the condition of the lung. She died shortly afterwards, and the specimen before him was removed on a post mortem examination. The surface of the lung, where it lay in contact with the pericardium, was adherent to the latter; and there was also extensive adhesion between the pericardium and the heart. Frottement had originally existed; but when Dr. Law examined the patient, the surfaces had become adherent, and there was then only the increased action of the heart, which is heard after adhesion of the pericardium to that organ. The case appeared to be interesting, as showing that the period in which frotte-

ment is present may pass by, and that the only remaining sign will be that apparently increased action of the heart which is sometimes heard after adhesion of the pericardium. (*Museum, Sir Patrick Dun's Hospital*).

3. *Obstruction of the Ureter.*—Dr. Carlile presented the kidney, ureter, and bladder of a female who had come into hospital in the advanced stage of pneumonia, and died two days afterwards. On examining the viscera of the abdomen the ureter of the left side was found to be full of fluid, and so much distended that at first it was mistaken for a portion of the small intestine. The kidney presented the usual phenomena of distention from the pressure of the fluid; the calices were greatly enlarged, and a portion of the substance of the organ was converted into a cyst filled with fluid. The bladder was small and contracted, and presented all the appearances of having been for a long time in a stage of irritation. The most interesting point, however, connected with the case was the state of the ureter. When distended with air by means of a blowpipe its diameter was found to be an inch. Dr. Carlile observed that during life there must have been some cause in operation to prevent the free passage of the urine, and produce so much distention, and yet, on examination, it was found that the ureter communicated with the bladder. On introducing a probe from the bladder into the ureter the cause of the obstruction was discovered. At the lower end of the ureter, and quite close to the point where it enters the bladder, a kind of diverticulum or pouch had formed on one side of the ureter, and when this was full of fluid it pressed on the valvular orifice of the ureter and prevented the fluid from passing into the bladder. In addition to this there was a deposit of matter apparently of a tubercular character at the lower part of the ureter; whether this led to the formation of the pouch Dr. Carlile could not say.

4. *Softening of the Heart with thinning of its Parietes.*—Dr. Stokes said that the heart before him was taken from an individual whose case possessed more than ordinary interest, from the great doubt and difference of opinion to which it gave rise. He would detail briefly what he knew of the history of the case. It was an example of that class of affections which every practitioner must have met with at some time or other, in which the diagnosis remains obscure although most of the symptoms are of an important character. The case he was about to detail would furnish an example. An individual, who appears to be in good health, looks well, has a good appetite, is strong, able to take exercise, and to fulfil the duties of an active profession, applies for medical advice, and the only thing remarkable about him is a singularly irregular and rapid pulse, so quick and so deficient in regularity that it is almost impossible to count it. The action of the heart is also irregular and cannot be analyzed. Of this description of case Dr. Stokes said that every practical man must have seen examples. Looking to the specimen before him it would be hard to define what was its exact

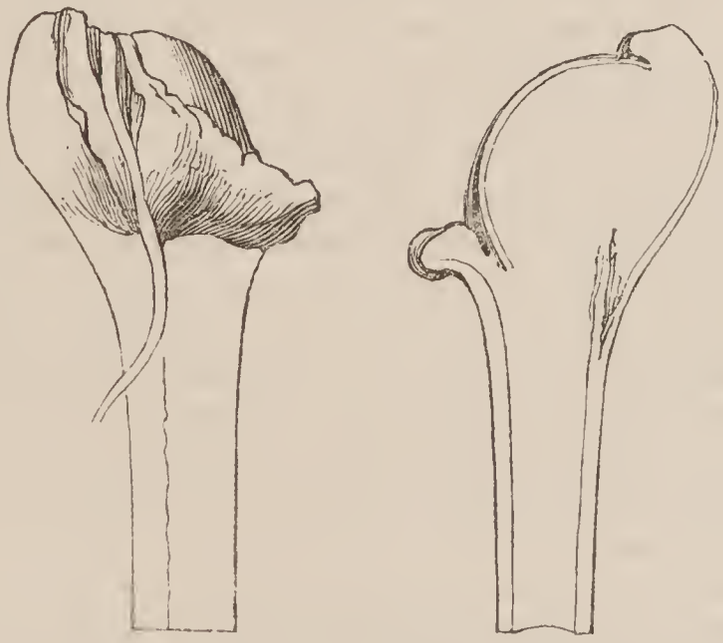
pathological condition. The person from whom it was taken had the peculiarity of circulation, already mentioned, for several years. Some years since he left this country for a warm climate and was at that period in perfect health. After residing there for seven or eight years, he was attacked with one of those affections incidental to warm climates, and consulted a military medical officer, who, having remarked the singular state of the circulation, was informed by the patient that he had noticed this condition a long time before; soon after this he was invalided and sent home. He arrived in this country somewhat reduced in strength, but in a short time recovered, with the exception of some cough and difficulty of breathing. He consulted a very eminent medical man, who gave it as his opinion that it was a case of dislocation of the heart consequent on empyema of the left side. He then went to London where a different opinion was given (the exact nature of which Dr. Stokes did not know), and after some time returned again to Dublin. When seen by Dr. Stokes he had the appearance of a man in good health. He complained of a cough and difficulty of breathing, particularly on making any active exertion, but stated that he could go about and enjoy society. There was one peculiarity in his case worthy of attention: he stated that he was always better when he took a free allowance of wine, and that abstinence or depleting medicines made him worse. He had no anasarca, nor was there any thing in his countenance expressive of disease of the heart. The pulse was as before described, the action of the heart quick and irregular but feeble, and the sound on percussion over the precordial region not remarkably dull. There was no evidence of effusion into the pleura, and his cough was merely a slight dry catarrh. Dr. Stokes recommended him to go down to the country and remain there for some time. During his stay there he contracted a bad bronchitis, and let it run on for a week without using any remedy. He returned to Dublin, and when seen by Dr. Stokes he had violent bronchitis, with sonorous and wheezing rales anteriorly; posteriorly in both lungs, towards the lower parts, an intense muco-crepitating rale was heard. The action of the heart now became more feeble and irregular, while the same rapid action continued; and the pulse grew daily weaker and fainter, until it could no longer be felt at the wrist, and his limbs became œdematous, blue, and cold. The impulse of the heart became gradually weaker and weaker, until at last it appeared to cease altogether. He remained in this state for four days and then died. Every kind of stimulant was employed with the view of rousing the action of the heart, but without effect. In one night he used a bottle of brandy and a considerable quantity of wine. The misery he endured from an overwhelming sense of exhaustion appeared to be extreme, and as his voice, which was naturally strong, never failed him until a few moments before death, his outcries were truly heart-rending. The symptoms connected with the heart were, extreme irregularity, and extreme rapidity of action, absence of murmur, and very feeble

impulse. On opening the thorax the heart appeared to be greatly enlarged, but this arose from the distention of the right ventricle and auricle, which were very much enlarged and filled with blood. There was no trace of inflammation anywhere. The right ventricle was thin, and appeared to contain more adipose substance than usual, but was not in the fatty condition described by Mr. Smith at a former meeting. The left ventricle was enlarged but not thickened. The whole substance of the heart was softened, so much so, that it broke down readily under the finger; and in taking the organ out of the thorax a rent occurred passing from the posterior part of the right ventricle across the septum cordis. All the valves were healthy. Dr. Stokes observed that this case would thow some light on the general nature of the decease. There was one point to which he would allude briefly: Laennec states that clearness of sound in affections of the heart indicates dilated cavities; without denying this, Dr. Stokes would remark that clearness of sound indicated not merely dilatation of cavities or mechanical thinning, but also strong action of the muscular fibres of the organ; dilatation and thinning might occur without increased clearness of sound.

Ninth Meeting, January 30, 1841.

Dr. Graves in the Chair.

1. *Impacted Fracture through the anatomical Neck of the Humerus.*—Mr. Smith exhibited an example of this rare form of injury of the humerus, the only one of the kind he had ever seen, nor was he aware of such an injury having been already described. The



accident occurred about eight years since, at which time the patient (a female, æt. 52) was admitted into the Richmond Hospital, under the care of the late Dr. M'Dowell, who appears to have diagnosed

the injury, as it is entered in the hospital case book as "fracture of the humerus;" but it is greatly to be regretted that the appearances were not recorded. The woman was again admitted into the hospital, under the care of Mr. Adams, about five years afterwards, with an impacted fracture of the neck of the femur; one month after the occurrence of which she died of diarrhœa.* The shoulder point was then examined; the arm was slightly shortened, and the shoulder not so full and round as the opposite. Upon opening the articulation, the head of the humerus was found to be sunk into the cancellated tissue of the shaft so deeply, as to be nearly on a level with the line of the anatomical neck of the bone; the great tuberosity was inclined outwards, forming a considerable curve with the outer surface of the shaft of the humerus, around the depressed head of which there was an osseous collar of newly-formed bone, largest along the inner part of its circumference. The accompanying wood-cuts show the situation of the fracture, and the relative position of the fragments. (*Museum, Richmond Hospital.*)

2. *Malformations of the Hands and Feet.*—Mr. Smith exhibited the skeletons of the hands and feet of an individual, who had six fingers upon each hand and six toes on each foot. *Right Hand.*—From the centre of the ulnar edge of the fifth metacarpal bone, there sprung at a right angle an osseous growth, about half an inch in length; and with the anterior surface of this process, there was articulated a sixth finger, consisting of only two phalanges, the first or metacarpal phalanx being deficient. *Left-Hand.*—The supernumerary finger was here placed between the ring and little finger; it consisted of three phalanges and a metacarpal bone; the former were perfectly developed, but the latter was remarkably small, and tapered to a point at its posterior extremity, where it was joined by a ligamentous structure to the posterior extremity of the ulnar edge of the metacarpal bone of the ring finger.

Right Foot.—The fifth metatarsal bone, about half an inch in front of its junction with the cuboid bone, was bifurcated, and thus a sixth toe was formed, perfect in all respects. *The left foot* was precisely similar. Mr. Smith also described a preparation, which he had seen in the Musée Dupuytren, of a foot with eight toes. In this preparation there were five cuneiform bones; the first, second, and third metatarsal bones were articulated to what, in the normal state, are the internal, middle, and external cuneiform bones; the fourth metatarsal was joined to the fifth, and articulated with the fourth cuneiform; the sixth metatarsal with the fifth cuneiform, and the seventh and eighth with the cuboid bone.

3. *Tumour removed from the abdominal Parietes.*—Mr. Cusack exhibited a tumour, removed some days since from the abdomen of a man, aged fifty. It was pendulous, being attached by a small pedunele, and had nothing remarkable in its appearance except an enlarge-

* See Dublin Journal, vol. xvii., p. 31, Case XXXV.

ment of the cutaneous veins, three or four of which, of considerable size, ramified on the surface of the tumour. Some time back an ulcerated opening had formed on the tumour, from which there was a continual oozing of sero-sanguineous fluid. There was a distinct capsule, which seemed to be formed of the cellular tissue in which it was originally formed. Mr. Cusack said, he was inclined to think that the tumour had assumed a malignant character, although it did not appear to have been originally so. It appeared to consist of a variety of structures, the outer portion being much firmer than the internal. One of the most interesting points connected with it, was the small supply of blood which it drew from the body for its support. Several large veins ramified on the surface; but the artery by which it was supplied was not larger than a fine thread. The next point was the length of time the tumour had existed, it being of twenty-four years' duration at the time of its removal. When Mr. Cusack saw it first, about eight years ago, it was small, and appeared to have all the characters of a simple tumour. He thought, however, that it had changed its character, and become malignant. This was a principle not denied by the best pathologists, for simple encysted tumours had been known to become malignant. (*Museum, Park-street School*).

4. *Soot-Wart removed from the Hand.*—Mr. Cusack said, he would exhibit another small specimen, but still one deserving of attention. He believed it was now very generally admitted, that the cancerous soot-wart did not form on the scrotum alone, but was also met with on various parts of the body. The specimen before him was a wart of this description, which he had removed that morning from the hand of a female, who carried on with her son the business of a chimney-sweeping establishment. She had had two sons, one of whom died of cancer; and from the ear of the other, when about twelve years old, Mr. Cusack had removed a soot-wart. The woman had had the disease for some time; but, finding it increasing in size, and fearing the fate of her son, she came to hospital, and had it removed.

5. *Abnormal Connexion between the Bladder and Mesentery.*—Professor Harrison observed, that every member of the profession was acquainted with the internal strangulation of the intestines by bands, which are sometimes the result of inflammatory action, while in other cases they consist of some peculiar natural structure; in the former case, they are formed of organized lymph, in the latter they are some original structure, most generally belonging to the period of fœtal life. In Dr. Harrison's case, a long cord extended from the end of the urachus back towards the mesentery, into which it was inserted, near the lower end of the ileum, and close to the cœcum. This formed a kind of noose or loop, in which a portion of the mesentery had been caught; and if a coil of intestine had been also engaged in it, the consequence would be, most probably, internal strangulation. In illustration of this case, Dr. Harrison said he would beg leave to exhibit a drawing of a preparation which he had deposited in the Museum of the College of Surgeons. The subject of the case was a young

female. She was suddenly seized with pains in the abdomen, followed by obstinate constipation, and symptoms of peritonitis, which rapidly ended in death. Upon examination, a cord was found running from the end of the urachus, to be inserted into the mesentery; this had formed a noose, in which a portion of intestine was engaged and strangulated. The preparation is still preserved in the Museum of the College of Surgeons, and is marked in the catalogue A. 576. Dr. Harrison said, he did not at first understand the nature of these bands; but since the recent discoveries in embryology much light had been thrown on the subject; and from the situation, appearance, and attachments of the band, it was plain that it could be nothing but the urachus with the remains of the omphalo-mesenteric vessels. The nature of these bands would be understood by recollecting what happens during the early period of fœtal life. In the chick, the vessels which form the area vasculosa on the surface of the yolk bag, gradually unite and form two vessels, which, as the animal grows, run towards the mesentery, in order to transmit the blood to the heart. Dr. Harrison also exhibited this structure in the fish, and observed, that, as in these animals, the bag is borne about for some time before it is taken into the cavity of the abdomen, it can be seen to great advantage. In the human subject, there is an organ analogous to the yolk bag of the chick, namely, the umbilical vesicle, which disappears about the sixth week of fœtal life, and the use of which appears to be the same as that of the yolk bag. As the child becomes more advanced the umbilical vesicle is carried into the abdomen, and becomes gradually obliterated; but its vessels can be still seen passing in towards the mesentery. It was not unreasonable to infer, that what occurred in the lower animals occurred also in man; and as the fœtus advanced in growth, and the bladder descended into the pelvis, the omphalo-mesenteric vessels would be seen running from the top of the bladder towards the mesentery. In the more advanced period of fœtal life, these omphalo-mesenteric vessels being no longer of any use, wither and disappear; but they do not always do so, and sometimes a rudiment remains, forming a cord which extends from the top of the bladder to the mesentery. In the specimen under consideration, the structure was quite perfect, presenting a firm cord covered by peritoneum, and continuous with the fibrous tissue of the bladder on the one hand, and with the mesenteric vessels on the other. From this view of the case, Dr. Harrison said he thought he was wrong in terming the preparation first alluded to as an instance of internal strangulation by the urachus, as the strangulation had been produced, not by the urachus, but by the remains of the omphalo-mesenteric vessels. (*Museum, Trinity College*).

Tenth Meeting, February 6th, 1841.

Dr. Corrigan in the Chair.

1. *Scirrhus of the Pancreas.*—Dr. Mollan exhibited the recent parts in this case; they were taken from the body of a man aged

seventy-three, who had been admitted into the Whitworth Hospital, on the 28th of the preceding month. He stated, on admission, that he had been for a long time subject to pain in the stomach after eating, and that within the last six or eight months this pain had become severe and of frequent occurrence. He was considerably emaciated. He had tenderness on pressure over the epigastric region, and a tumour was perceptible, also, to the right of the umbilicus. No advantage was derived from any plan of treatment, and the man gradually sunk and died on the preceding Wednesday. About fourteen days before his death he became universally jaundiced, but had no vomiting until two or three days before death. He had been of temperate habits. On examining the stomach it was found distended with dark-coloured fluid, and its mucous coat presented marks of increased vascularity. The seat of the tumour was found to be the pancreas, the head of which appeared to be changed into a scirrhous structure; the termination of the biliary and pancreatic duct was compressed by it; the gall bladder and hepatic ducts were greatly distended with bile of a dark-green colour; there were several tubercles in the substance of the liver, of a white colour and scirrhous structure.

2. *Dilatation of the Arch of the Aorta.—Sacculated Bladder. —Cancer of the Liver and Stomach.*—Dr. Corrigan exhibited a remarkable specimen of dilatation of the arch of the aorta, with permanent patency of the aortic orifice. The left ventricle was greatly hypertrophied. With respect to the case itself, there were one or two points worthy of notice. One of the strongest marks of the existence of this disease is, that a loud *bruit de soufflet* is heard over the sternum opposite the cartilages of the third and fourth ribs, while the same sound is weak under the mamma. In this case the sound was not loud in the former situation at any period of the man's illness. The other signs of the disease, however, were so well marked, that Dr. Corrigan had no hesitation in making the diagnosis. The man laboured under emphysema, particularly of the left lung, and had that peculiar bowed appearance of chest, which is so frequently observed. A portion of emphysematous lung overlapped the heart and aorta close to its origin, so that the *bruit de soufflet* was not heard distinctly in the usual situation. As the stethoscope was moved upwards, however, it became more distinct, and was very audible over the region of the arteria innominata. Dr. Corrigan observed that there was no further peculiarity in the case or preparation. The dilatation of the aorta had produced permanent patency of the aortic valves, without any great amount of disease in the valves themselves. In the same patient he had discovered an example of sacculated bladder. It presented a very curious and remarkable specimen of the sacculated condition. The patient had laboured under stillicidium urinæ. The liver of the same person presented an example of cancerous tubercle, or as it has been gene-

rally termed, Farres' tubercle. Some of these tumours were softened down in the centre and contained a cream-like matter. The same man presented an example of very remarkable disease of the stomach. The history of the case was this. About five months before his death the patient was attacked with hematemesis, for which he was blooded largely, and the vomiting of blood never returned. He stated that he never could eat any kind of animal food, but could use bread without any inconvenience. The only kind of fluid ejected was a thin, glairy mucus, and he never had the vomiting of dark grumous matter, so often observed in cancerous affections of the stomach. On examination, a large patch of cancerous ulceration was found commencing close to the cardiac orifice, and extending nearly to the pylorus. The seat of the cancerous deposit was in the sub-mucous tissue, and the matter in it resembled exactly that which was found in the liver. The pylorus was free from disease. Dr. Corrigan concluded by exhibiting the lungs of the same patient, and observed, that in addition to emphysema, they presented specimens of that form of tubercle which is sometimes seen in the emphysematous lungs of old persons, namely, hard granular cartilaginous bodies which never suppurate, and interfere very little with the functions of the lung.

3. *Wound of the Larynx, internal Jugular Vein, and Pharynx.*—Mr. Fleming detailed a case of suicide by cutting the throat. The specimen before him was removed from the body of an unfortunate man who terminated his existence by inflicting a wound in the neck with a penknife. He was a fine athletic man, about forty years of age, and had been for many years engaged as driver of a mail coach. He had been for the last six months in bad health, but his chief malady appeared to be connected with a state of deep mental despondency, arising, it was stated, from disappointments in life and want of employment. The most obvious symptoms of deranged health were connected with the digestive system. Latterly he had become much worse, and for the last three or four weeks had been confined to his bed. On Monday evening, February 1st, his wife happening to go into his room, found him bathed in blood, and instantly called for assistance. When Mr. Fleming arrived, he found him in a state of collapse, his heart scarcely pulsating, and his respiration hardly perceptible. The head was deluged with blood, but the hemorrhage seemed to have ceased, with the exception of a slight oozing from the whole surface of the wound. The wound itself presented a wide gash about two inches and a half in length. On removing the coagula, Mr. Fleming could not trace the bleeding to any particular artery or vein, and accordingly proceeded at once to dress the wound in a manner which has been followed by him for some time. This consists in dressing the wound from the bottom, with dossils of lint moistened with spirit of turpentine, or some stimulant lotion, avoiding all attempts to approximate its edges; the dressings were secured by compresses and a bandage, and the head placed in the horizontal position. During the greater part of the time, the man was uncon-

scious, but before Mr. Fleming left the room, consciousness had returned; the man was able to speak, and from the tone of his voice it was plain that there was no wound below the rima. During the two succeeding days, the case proceeded favourably, and there was no hæmorrhage; but in the evening of the second day, the man became suddenly delirious, jumped out of bed, and attempted to tear the dressings off the wound. He was brought back to bed, and soon after, fell into a state of exhaustion, and died at twelve o'clock the following day. On examining the wound, it was found that no artery of any considerable size had been wounded, the only vessel of importance which had been divided was the internal jugular vein. Although there was only one external wound, there were two openings internally, one in the pharynx, the other below the epiglottis, into the larynx, and close to the left aryteno-epiglottidean fold. In many cases of wounds of the throat, the patient is very much distressed by constant cough, which comes on particularly when he makes an attempt to swallow fluids. This, however, did not occur in Mr. Fleming's case, for the epiglottis remaining untouched was quite competent to the performance of its ordinary functions, and, consequently, none of the fluid swallowed got into the larynx, although a portion of it always escaped by the external wound through the opening in the pharynx, but without producing much irritation. The two internal openings were separated from each other by the left aryteno-epiglottidean fold; the external wound passed somewhat obliquely across the throat, in a direction between the larynx and os hyoides. On examining the interior of the larynx, particularly on the left side, a degree of irritation of the lining membrane, with some submucous infiltration, was found to exist, most probably the result of commencing inflammation. The internal jugular vein, particularly that portion of it immediately below the wound, was filled with coagulum. In addition to this, it would be necessary to observe, that the whole neck and head above the wound appeared to be quite anemic. Mr. Hatchell, who had opened the brain and removed the parts for exhibition, stated, that he had never made a dissection with so little effusion of blood, and that he had never observed the brain so pale and bloodless. These circumstances led Mr. Fleming to the conclusion, that the ordinary rules laid down for the treatment of wounds of the throat, are liable to many objections. According to these rules the surgeon is directed to close the wound and approximate its lips by the aid of sutures, bandages, &c., and that this state is to be further promoted by keeping the head bent towards the chest. Mr. Fleming said he was disposed to adopt an opposite plan of treatment, particularly in the early stage of the wound. In the first place the patient's disposition and state of mind are generally such as render abortive an attempt to effect union by the first intention. In the next place, there are no means of approximating the deep-seated parts of the wound, whatever may be done with the superficial. Thirdly, the position enjoined is such as to increase the

tendency to syncope, an occurrence which is so frequently observed in cases of the kind, and which should be removed by the cautious use of stimulants. It must be obvious to every reflecting person, that raising the head and inclining it forwards to the chest, will increase the anemic condition of the brain. Hence Mr. Fleming has been in the habit of dressing the wound with dossils of lint, moistened with spirit of turpentine, so as to make it unite from the bottom, and the tendency to syncope is obviated by removing the patient's pillow, and placing the head in the same horizontal line with the body. Mr. Fleming observed, in conclusion, that he was inclined to think, the patient whose case he had detailed would have recovered, if he had remained quiet, and taken nourishment. The fluid swallowed escaped at first through the wound, but by making compression over the outer bandage, at the time he was drinking, the escape of fluid was prevented, and it passed into the stomach.

Eleventh Meeting, February 13th, 1841.

Mr. Cusack in the Chair.

1. *Bright's Disease of the Kidney.*—Dr. Corrigan, in exhibiting a specimen of disease of the kidney, said he brought it forward chiefly in support of an opinion he had advanced last year. It was this: that the opinion very generally entertained, and partially stated by Dr. Bright himself, was inaccurate, namely, that two states of the kidney, differing very much in their appearance and character, and to which the name of "Bright's kidney," has been applied, are only stages of one and the same disease. On that occasion he brought forward a preparation to show that these were two distinct diseases, one consisting of a state of the kidney in which there is interstitial deposition of lymph through its tissue, by which the organ becomes larger than natural, smooth on its exterior surface, and of a pale-yellow colour, so as to resemble the large yellow liver in many points, a state in which the kidney remains and has no tendency to degenerate into cirrhosis or contraction. There is also a state of the kidney, termed "Bright's kidney," in which the organ is smaller than natural, of a granular appearance, and brownish-yellow colour, and in which the cortical tissue is of very little depth. But it appeared to him that the yellow enlarged kidney which he had just described was very different from Bright's kidney, for in the latter there is always contraction of the cellular matrix, and a consequent diminution in the size of the organ. The specimen before him was one that showed yellow enlargement in the advanced stage. The patient had been ten months ill, even with the aggravated and advanced symptoms of the malady, and if the contracted state of the kidney was only a more advanced stage of the disease, it would be reasonable to infer that the kidney would have reached that stage before the man's death. There was, however, not the least appearance of it. The specimen was therefore, so far as it went, a proof of the doctrine which he had

advanced. The man was ill for a long period (for ten months with aggravated symptoms), and died with the usual symptoms which accompany Bright's disease of the kidney. In corroboration of what he had advanced, Dr. Corrigan said he would beg leave to allude to a case which had recently come under his observation. A woman was attacked with ascites, for which she was tapped three times. The abdomen again enlarged, and with this she had symptoms of "Bright's kidney;" but the most remarkable feature about the case was, that the fluid drawn of by tapping contained an enormous quantity of urea; indeed, so much, that Professor Kane, to whom he sent the fluid for analysis, could scarcely believe that it was not urine. The case had been alluded to by him on a former occasion, as bearing on the question as to the power possessed by the glands and other organs of separating from the blood matters not found in it naturally; but the fact was, that this extraordinary secretion of urea, most probably, proved the means of saving the woman's life by relieving the kidney, and preventing the formation of Bright's disease of that organ.

2. *Aneurism of the Heart.*—Dr. Corrigan said that the next specimen which he had to present was one of disease of the heart. The man from whom it was taken had at first attacks of angina pectoris; he then got œdema of the lung, and effusion into the pleura, which proved fatal. His illness commenced with irregular paroxysms of dyspnœa, which continued for some time at uncertain intervals; he then began to present signs such as would occur from narrowing of the left auriculo-ventricular opening. He had bruit de soufflêt and fremissement; and Dr. Corrigan had not for a long time met with a case in which the physical signs of valvular disease were so closely simulated. On examination after death, in addition to disease of the liver, the heart presented the following morbid change: there was no disease of the left auriculo-ventricular opening, but immediately opposite to it there was aneurism of the lining membrane of the heart itself. The muscular tissue had almost completely given way; and as the direction of the aneurism was forwards, the sac pressed against the cartilages of the ribs, conveying to the finger the sensation of an aneurism, and to the ear that of fremissement.

3. *Pneumonia.*—The third preparation which Dr. Corrigan wished to lay before the Society, was one of considerable interest; it was a specimen of a rare form of pneumonia. The preparation had lost much of its original appearance from keeping, but enough still remained to enable any one who inspected it to recognize it as a peculiar form of disease. A portion of the lung was healthy, and contrasted strongly with the diseased part; one of the most remarkable phenomena was the colour of the lung, the diseased portion of which was of a deep blue bordering on purple; it did not crepitate under the finger, and, generally speaking, portions of it which had been removed sank in water. The principal features of the disease to which Dr. Corrigan wished to direct attention were these. In the first place it seemed to be a simple congestion of the capillary vessels.

There was no effusion of lymph, no tendency to pass into the second stage, no trace of purulent matter any where; there was the usual dulness on percussion, and the ordinary crepitating râle; but the most remarkable feature in the case was the great depression of strength; in no disease could the asthenic character be better marked. The patient in this case was a poor woman, and had been blooded largely before Dr. Corrigan saw her; she came into hospital in a very low state: the surface was pale, the extremities cold, the respiration quick but feeble, and expectoration difficult; in fact, the depression was so marked that it was found necessary to give her stimulants and to continue their daily use up to the time of her death. On examination, the lung was found in the state described, without any trace of lymphy exudation, and very different from the ordinary first stage of pneumonia. With regard to the congestion, it was of a peculiar kind; there was no exudation of serous or bloody fluid, the lung did not pit on pressure, and did not appear as much swelled as it usually is in ordinary cases of pneumonia. It was not brittle; and it sank in water. But the most distinguishing feature of the disease was the marked presence of those symptoms which are supposed to indicate great vascular debility. There was no pleuritis.

4. *Caries of the Occipital Bone.*— Dr. Kirkpatrick exhibited a specimen of disease affecting the membranes at the base of the brain, attended with caries of the occipital bone, without any prominent symptoms during life. The patient was a poor woman who had been in many hospitals, and was admitted about a month since into the North Union Workhouse, with a large bed sore on her hip. With this exception she did not complain of anything beyond mere debility, and the treatment was directed to the restoration of her strength, and the cure of the ulcer; she remained, however, in the same state, and after some time she was attacked with occasional vomiting, and complained of pain in the back of her head; she had no paralysis or convulsive motions; she became gradually worse, and died a few days since, without any very prominent symptoms. On examination the left lobe of the cerebellum was found to adhere closely to the membranes, and the latter were separated from the bone by a quantity of lymph: where the lymph lay in contact with the bone the internal table was eroded to a considerable extent. On examining the internal ear it was discovered that the membrana tympani was absent, but the ossicula were still in their places, and there was no disease in the mastoid cells.

5. *Bright's Disease of the Kidney. Renal Phlebitis.*—Dr. Stokes said that at a former Meeting he had brought forward two specimens of the pale-yellow degeneration of the kidney, with this peculiarity, that the emulgent veins exhibited the phenomena which are usually considered to be produced by phlebitis with mechanical obstruction of the veins. This is a condition which has not been noticed by Bright, and although it has been described by Cruveilhier, it never has been noticed as connected with Bright's disease. Dr.

Stokes said that renal phlebitis had been described in a recent fasciculus of Cruveilhier's work on pathological anatomy; but had not been alluded to in connexion with "Bright's kidney." Dr. Stokes exhibited Cruveilhier's plate, which represented the phenomena of renal plebitis in a woman who died of puerperal fever; the phlebitis was limited to the renal vein, in the trunk of which there was an adherent clot; the tissue of the kidney was pale, but otherwise healthy. From his description it would appear, that Cruveilhier had not recognized renal phlebitis in connexion with "Bright's kidney." Dr. Stokes said that he brought the kidneys which he had exhibited at a former Meeting, for re-examination, as they presented a very remarkable inflamed condition of the renal veins. Since that time he had had a very remarkable case of a patient who died with Bright's disease of the kidney and dropsy. The immediate cause of death appeared to be sloughing of the parts over the sacrum. It would be necessary to state that the urine was albuminous and of a low specific gravity. On examination a condition was discovered not exactly the same as the last, but still one which in the present stage of the inquiry deserved attention. He could not say that the renal veins were inflamed, but at the opening of the principal trunk there was a clot of considerable size; at one point this was tolerably resistant, but it was not so firm as in the last case, was of a deeper red colour, and had more resemblance to a clot from stasis; it passed, however, from the emulgent vein into the body of the kidney; in one of the kidneys it adhered very loosely, but in the other it was strongly adherent. Here then was a case of Bright's kidney in a person labouring under dropsy, with albuminous urine, and in whom, on dissection, adherent coagula were found passing through the emulgent vein, and terminating in the cava. The preparation which he was about to exhibit had been given to him by Sir H. Marsh; it was the kidney of a woman who died with dropsy and albuminous urine. The renal vein was remarkably thickened, and in its interior there was a well marked coagulum. Here then were three cases of disease presenting the same characteristic features: in the first case the patient did not labour under dropsy, but died with the symptoms which are generally observed in cases where pus has been introduced into the system; in the second and third cases the patients had dropsy; in the first and third cases the evidences of venous inflammation were obvious, in the second they were somewhat doubtful. Dr. Stokes observed that Dr. Hutton had favoured him with a drawing of a case which he believed to be a form of renal phlebitis. It occurred in the person of an individual who had diffuse inflammation, with a tendency to the formation of purulent depôts in various parts of the body. Dr. Stokes exhibited the drawing, and said that it appeared to be an example of acute renal phlebitis.

6. *Aneurism of the Aorta.*—Dr. Corrigan said that the case he was about to bring forward was one possessed of some interest; it was the case of a woman who dropped dead in the street the

day before. On examination it was found that an aneurism of the aorta close to its origin had burst into the pericardium. The lungs were healthy. Dr. Corrigan said that there were one or two points in the case worthy of notice. In the first place, the case went to prove that aneurism of the arch of the aorta has no tendency to produce enlargement of the heart, the organ being in this instance of its natural size. It was to be observed, however, that in this case the aortic valves were sound, and the distention of the aorta did not throw any additional weight or labour on the heart. Another point connected with it was the remarkably fatty state of the heart, with a well marked softening of the left ventricle, the substance of which yielded readily when pressed between the finger and thumb.

7. *Bright's Disease of the Kidney.*—Dr. Law laid before the Meeting a series of preparations illustrative of Bright's disease of the kidney. The first was a kidney taken from a man who had been admitted into Sir Patrick Dun's hospital, with copious discharge of urine containing a large proportion of saccharine matter, a dry skin, thirst, great appetite, and all the usual symptoms of diabetes. Soon after his admission the urine was tested by heat, but did not show any disposition to coagulate. In the course of about a fortnight considerable improvement took place; the thirst was less intense, the skin was softer, and the quantity of urine diminished. This improvement was attributed to the use of warm baths and Dover's Powder. After some time, however, his urine became highly albuminous; symptoms of dropsy appeared, and his feet began to swell. These symptoms were followed by ascites, oppression of breathing, and effusion into the cavity of the chest, of which the man died. During the prevalence of the diabetic symptoms no albumen could be discovered in the urine, but when the symptoms of anasarca came on it became highly albuminous, and at the same time of a low specific gravity. On dissection the kidney was found not increased in size; it exhibited several yellow spots on the surface, which appeared also to extend into the cortical substance. Dr. Law thought it would be fair to infer that this specimen exhibited Bright's disease in the early stage. When the man was admitted he was labouring under diabetes, and did not until some time afterwards manifest any symptom of an organic affection of the kidney. The next specimen he had to present was a large smooth yellow kidney, taken from the body of a young female, aged eighteen. She was admitted with general symptoms of anasarca, and ascites, attended with a considerable degree of fever, and a sharp quick pulse. She was blooded the day after she came in, and the blood was found to be buffed and cupped; her urine was tested by heat and found to be decidedly albuminous. Dr. Law attempted to treat her with mercury, but it disagreed with her in every shape, and he was obliged to limit her treatment to diaphoretics, and the use of the warm bath. Under this treatment she got better, and was about to leave the hospital, when she was attacked with pain in the left side followed by oppression of breathing, and

diedin thirty-six hours. On examination there was extensive effusion found in the cavities of the peritoneum and pleura. With respect to the kidneys, the appearances presented by them would be seen by inspecting the preparations. Dr. Law regretted that at the time he made the section he was not aware of Dr. Stokes's observation, but even still a remarkable thickening of the coats of veins could be perceived. One of the kidneys had been injected, and it was remarkable how little of the injection had passed into the substance of the organ. The third specimen was a kidney which was shrivelled and diminished in size. Dr. Law said that it was taken from an old person who died with symptoms of chronic bronchitis, cirrhosis of the lung, and general anasarca. The urine was not examined during life, but some which was found in the bladder proved to be highly albuminous.

Twelfth Meeting, February 20th, 1841.

Professor HARRISON in the Chair.

1. *Ulceration of the Intestines. Tubercles in the Lungs and Liver.*—Dr. Lees presented a specimen of tubercular disease in a child, which had come under his care about three weeks since, for an attack of scarlatina, during its convalescence from which, it was attacked with symptoms of pneumonia. Under treatment, it seemed to improve for a while, but in the course of a few days, became much worse, and continued, up to the time of its death, to labour under hard, frequent cough, accompanied by quick pulse, fever, emaciation, and diarrhœa. Upon examination after death, the posterior parts of both lungs were found filled with tubercles, and in one place there was a large cavity. In addition to this, there was an extensive deposition of scrofulous matter in the form of small tubercles, scattered over the peritoneal surfaces of the diaphragm and liver. The rectum was covered with aphthous ulcerations. Dr. Lees observed that Dr. Hodgkin alluded to these depositions of lymph on the under surface of the diaphragm and convex surface of the liver, in his treatise on diseases of the serous membranes, and thinks that they occur on the surface of the peritoneum, and not under it, as the genuine scrofulous tubercle most commonly does.

2. *Condition of the Intestine in Fever.*—Dr. Corrigan said, that the first series of preparations he was about to lay before the Meeting, possessed a certain degree of interest, although they did not exhibit any morbid phenomena. They were taken from the body of a groom who was admitted into the Hardwicke Hospital, on the eleventh of February, with symptoms of low typhus, which came on three days before admission. When seen by Dr. Corrigan, his face was congested and dull, his body covered with pale maculæ, he had remarkable prostration of strength, and the depending parts of the body were of a dusky livid colour. His respiration was irregular and hurried, his pulse small and weak, and in spite of every means adopted, he continued to sink rapidly, and died with symptoms of coma on the

thirteenth, three days after admission. During the course of his illness, his urine was carefully examined, and its condition was very remarkable. It was small in quantity; of the specific gravity, 1015; let fall no sediment; gave no urea when tested with nitric acid, and contained a large quantity of albumen. But one of the most curious features of the case was, that no organic lesion could be detected after death. Many of the continental writers assert, that typhus has its seat in the intestinal canal, in other words, that it is nothing more than a gastro-enteritis, and ulcerations of the lower portion of the intestines are said to form one of its most constant and unvarying characters. Dr. Corrigan said he had brought the ileum and colon with him, and any one who inspected them would see that there was not the slightest approach to disease of the mucous membrane or its glandular apparatus. The only thing bearing any resemblance to disease was hypostatic congestion of the lung. The case was important, as shewing that disease of the intestinal canal does not constitute the pathology of fever.

The next case was one which is not uncommon in this country. The disease came on after an attack of fever. The whole duration of the case, in this instance, was about four weeks. About a month since the patient was admitted into the Hardwicke Hospital, with symptoms of fever, from which she recovered. A few days afterwards she presented a train of symptoms not unfrequently observed in such cases. Her pulse began to rise; she complained of pain in the lower part of the abdomen, and suffered from diarrhœa. Now, when the pulse increases in frequency after fever, it may be generally looked upon as a bad sign; in this case it rose to 120. Still, the local symptoms were by no means prominent. When closely questioned, she complained of some fulness and pain of the abdomen, and had slight tendernesss on pressure. The diarrhœa then became worse, and she sank in the course of a few days. On examination, the intestinal tube presented a very well marked specimen of follicular enteritis. The colon and the lower part of the ileum were the principal seats of the disease, which could be seen in every stage from slight enlargement of the follicles, with atheromatous looking deposit in the centre, until they attained the size of a pea, filled with a yellowish slough forming an elevated projection above the surrounding mucous membrane. In one part of the ileum there was an ulcerated spot about the size of half-a-crown. Dr. Corrigan observed, that the preparation contrasted very well with the specimen of ulceration of the rectum, shewn by Dr. Lees. In Dr. Lees' case, the ulcerated portions were depressed, and below the level of the surrounding mucous membrane; in his case, the ulcerated glands formed a series of pea-like projections, rising above the surrounding mucous surface. In Dr. Corrigan's case, the ulceration was chiefly confined to the lower portion of the ileum, and the commencement of the colon; it had also attacked the appendix vermiformis, and this circumstance afforded an explanation of a symptom which had more than once

come under Dr. Corrigan's observation. In cases of this kind the patient has passed, on three or four occasions, what was shown to Dr. Corrigan as a species of intestinal worm. On examination, it was found to be somewhat less than a finger in length, and seemed to consist chiefly of lymph. On slitting up the appendix vermiformis, in the case last described, he found it filled with coagulated lymph, a portion of which appeared to be undergoing the process of purulent softening. In the case to which he had alluded, where portions of lymph of this size and shape had been passed, he supposed that after the lymph had been formed and moulded in the cavity of the appendix vermiformis, it was discharged into the colon and expelled. Dr. Corrigan, in conclusion, observed, that the case he had detailed, in which the patient had lingered for a long time, after symptoms of fever had disappeared, coupled with the case of maculated fever, in which death had occurred in six days, possessed much interest, and from a candid review of both, it was difficult to avoid coming to the conclusion, that disease of the intestinal tube does not constitute the pathology of fever.

3. *Abscess connected with the Larynx.*—Mr. Hamilton presented the recent parts in this case; they were taken from the body of a boy who had been admitted into one of the provincial hospitals, labouring under dry cough. Shortly after admission, he was seized in the middle of the night with violent dyspnœa, croupy cough, and breathing, and loss of voice. He was leeched, blistered, and put on calomel and tartar emetic, but without any good effect; his breathing became more laboured, and he was attacked with a sense of suffocation whenever he attempted to lie down. The gentleman under whose care he was, had almost decided on performing tracheotomy, when an improvement in his symptoms took place, in consequence of which the operation was deferred. The improvement, however, was but temporary, his symptoms reappeared with increased intensity, and he sank rapidly. On examination, after death, the back part of the larynx was found to be the seat of an abscess, which had engaged chiefly the posterior portion of the cricoid cartilage. The abscess was below the level of the rima, but in consequence of the tumefaction of the surrounding parts, almost complete closure of the rima had taken place. In the upper part of the left lung there was a considerable quantity of tubercles.

4. *Wound of the Trachea.*—Mr. Smith exhibited an example of a punctured wound of the trachea, taken from the body of a female æt. 28, who was admitted into the Richmond Hospital upon the tenth of April, 1836; she had been found lying in the street; her person and clothes were covered with blood; her extremities cold, and her face, neck, arms, and body, as low down as the umbilicus, emphysematous; there were marks of violence on her hands and knees, and a deep gash two inches in length upon one of her thighs; in the neck, there was a wound about an inch in length, which penetrated the trachea, passing obliquely downwards, so that the opening in the air tube was below the orifice in the skin. She respired alto-

gether through the wound, but in expiration, some air passed through the nostrils; when she attempted to drink, part of the fluid escaped through the wound; her respiration was hurried and laborious, and she always lay upon her back. The wound was closed with sutures, but they were soon removed, as the emphysema rapidly spread down to Poupart's ligament, on each side. Upon the day after her admission, her respiration was 54, and laborious; her pulse being 120; her countenance livid and congested; her strength was sinking fast; she became extremely restless, and was violently convulsed before death, which took place twenty-two hours after her admission into the hospital. During the convulsion which preceded death, her chest heaved powerfully; her mouth was drawn to the left side; the right leg was motionless and rigid, while the left was in constant motion, and a quantity of frothy mucus was forcibly driven through the wound in the trachea. Upon examination after death, it was found, that the instrument with which the wound had been inflicted, had penetrated both the anterior and posterior walls of the trachea, but without injuring the œsophagus, or any important blood-vessel, the cellular tissue of the anterior and posterior mediastinum was infiltrated with air, and the left cavity of the pleura contained a large quantity of blood-tinged serum at its lower part, the remainder of the cavity being occupied by air; the lung was compressed against the spine, and when cut into, presented a red fleshy appearance, was firm to the feel, and condensed in structure. Mr. Smith was unable to detect any laceration of the pulmonary pleura; he thought it probable that the air, having distended the mediastinum, burst through its lateral wall and then got into the pleural cavity. Mr. Smith observed that the most interesting feature connected with the case was, the escape of fluid through the wound, when the patient drank; it had been frequently observed in cases of wounds of the trachea, and after the operation of tracheotomy; it would seem that where there is a free opening in the air-tube below the larynx, rendering the opening of the glottis, as it were no longer necessary for carrying on the functions of respiration, the glottis loses, to a certain extent, that sensibility, which, in the natural state, protects it, and permits fluids to pass through its orifice; no satisfactory explanation, however, of the phenomenon in question, had yet been given. (*Museum, Richmond Hospital*).

Thirteenth Meeting, February 27th, 1841.

Mr. Carmichael in the Chair.

1. *Scrofulous Tumour removed from the Neck.*—Dr. Bigger exhibited a small tumour removed from the neck of a young person of scrofulous habit. It was situated over the projecting spine of one of the lower cervical vertebræ, where it caused a good deal of pain and inconvenience, and as the pressure exercised on it had produced much annoyance, and was supposed to have given rise to epileptic fits, the patient's friends were very anxious to have it removed. It was hard, moveable, seemingly encysted, and appeared to contain matter of a

hard, chalky consistence. On making an incision into the tumour, it was found to contain a quantity of hard, chalky substance resembling carbonate of lime.

2. *Circumscribed Empyema.*—Dr. Bigger, said that the next specimen he had to exhibit was the lung of an individual who died of encysted empyema of the left side of the chest, in which adhesion of the lung was present in a line extending from about two inches below the clavicle down to the base of the thorax. Along this line the respiratory murmur could be heard distinctly, and the sound on percussion was tolerably clear; beyond it there was complete dulness and absence of respiration until the finger approached the spine, when the sounds to be heard from a healthy lung again became audible. These phenomena were afterwards fully explained by the presence of an encysted empyema, the limits of which exactly corresponded with the line of dulness. During life small masses of dark coloured matter had been frequently expectorated, and on opening the bronchial tubes, this matter could be traced along their various ramifications, but chiefly along the larger ones, the calibre of which was much increased beyond their natural dimensions. On various parts of the bronchial mucous membrane small granular bodies could be seen of a dark-green colour, mixed with a reddish viscid mucus; they had a greasy feel, and sank in water. A considerable portion of this lung was carnified; upon the right side the phenomena of recent pleuritis were seen.

3. *Acute Induration of the Lung.*—Dr. Stokes said, that at the last Meeting of the Society, Dr. Corrigan had brought forward a specimen of disease of the lung not yet sufficiently known. The general history of the case he was about to detail was, that the subject had the symptoms and signs of pneumonia, but with this peculiarity, that it was not amenable to the ordinary plan of treatment. On examination after death, Dr. Stokes found that the lung presented some very remarkable characters. It was firm and solid, but had not the usual appearance of recent hepatization; it was grey, exceedingly tough, not exuding any quantity of blood when cut, not friable, and having none of the characters of acute hepatization from pneumonia. In addition to this there was no trace of lymph on the pleura, in fact no symptom of pleuritis, which is so common an accompaniment of pneumonia in this country. Dr. Stokes said that of late he had witnessed several cases of the kind, all of which went to confirm Dr. Corrigan's views, that there was a condition of the lung, presenting all the signs and symptoms of pneumonia, but with one very important difference, that it was not to be cured by antiphlogistic means. The patients will not bear bleeding, leeching, or indeed any kind of depletion, and the disease is not amenable to mercury. Dr. Stokes said that the case to which he alluded was that of a child, that no treatment seemed to produce any good effect, and that the little patient sank of exhaustion.

Dr. Stokes said that he had been requested by Dr. Lees to present another specimen which also tended to confirm Dr. Corrigan's

views. The portion of lung before him was taken from the body of a man who had been for many years in India, and who was said to have suffered from hepatic disease. After his return to this country he was attacked with inflammation of the lung, and in consequence of using mercurial ointment at the time was severely salivated. All treatment failed in producing any alteration in his symptoms, and he died on the eighth day of the disease. On examination, the lung was found to be solid, exceedingly heavy, and when cut into, of an iron-grey colour, precisely such as one would expect to find in a case of chronic pneumonia which had lasted for months, and in which none of the characters of recent hepatization could be detected. When cut into, it did not exhibit the granular surface of ordinary pneumonia, and so far from being friable, the greatest force was scarcely sufficient to break it down. In addition to this, there was no trace of lymph on the pleura, a combination, which, as he had observed before, was so frequently observed in the pneumonia of this country. The case which he had alluded to before, was that of a child, this was an example of the same disease in an adult. The disease seemed to be an acute induration of the lung, differing from ordinary pneumonia. This was the third case of the kind which Dr. Stokes had met with, in which the symptoms were not ameliorated by any plan of treatment; in the case he had described the patient had been fully salivated, and yet both lungs were extensively diseased. Dr. Stokes said he was inclined to look upon this as a discovery in pathology, for in the ordinary form of pneumonia, the phenomena are quite different. In this patient the liver was found healthy, but the spleen exhibited one of the most remarkable examples of softening he had ever seen. It looked and felt like a bag filled with fluid. On making an incision into it, it was found to contain a considerable quantity of fluid, somewhat like dark-coloured jelly, the internal structure of the organ being almost completely destroyed. Dr. Stokes observed, in conclusion, that the patient had never presented the ordinary crepitus of pneumonia which precedes hepatization, and that in every case he had witnessed, the absence of this sign was remarked.

4. *Fracture of the Cranium. Hernia Cerebri.*—Mr. Carmichael said that the case he was about to lay before the Society was one of injury of the head, followed by hernia cerebri. About six weeks since, he was called about eleven o'clock at night, to visit a gentleman's groom, who had fallen from a hayloft of considerable height in a state of intoxication. He was not observed until some time after the accident, when a fellow-servant going to call him to supper, found him lying on the ground in a state of insensibility, with a large quantity of blood about him. When seen by Mr. Carmichael, he was still insensible; his pulse feeble; his respiration slow and weak, and the surface of his body cold. On examination, a fracture of the skull with depression was discovered. Mr. Carmichael enlarged the external wound with a scalpel, and endeavoured to elevate the depressed portions of bone, but found them so firmly attached,

that he was obliged to give up the attempt. The man was removed to bed, and heat applied to the lower extremities. His condition, however, appeared to be desperate; he could not speak, and seemed to be incapable of swallowing. Next morning, Mr. Carmichael found him not only alive, but restored to a state of consciousness. Still his condition was very low, and his pulse so feeble that Mr. Carmichael could not venture on any depletive measures, and merely ordered some diluent drink and a purgative enema. Next day the pulse rose so as to admit of the abstraction of about eight ounces of blood, and the man was put on the mercurial treatment. Mr. Carmichael then made a second attempt to remove the depressed fragments of bone; but as this could not be effected without an undue degree of violence, and as the man did not appear to be labouring under any of the symptoms of compression, he thought it more prudent to leave them undisturbed. The patient continued to use the mercury until his gums were affected, and went on very well until about the fourteenth day, when some unfavourable symptoms began to appear. The principal of these were great debility, a considerable degree of listlessness, and an involuntary discharge of urine and fæces. The occurrence of these symptoms led Mr. Carmichael to think that the removal of the bones was necessary, and he now found them so loose that he could detach them without any difficulty. He removed several small pieces and one large fragment. Their removal, however, was not followed by any improvement in the man's symptoms; he became gradually weaker, but although listless and indifferent in his manner, could still answer questions, and seemed to be quite intelligent up to the period of his death, which occurred about five weeks after the accident. About three or four days after the removal of the bones, a fungus made its appearance through the opening; it sprung from the left anterior lobe, the surrounding tissue of the brain being discoloured and softened. With this fungus he did not interfere, and in the course of six or eight days it began to decline, and finally disappeared altogether. At its greatest elevation it rose about an inch above the surrounding bone. As to the practical point, whether it should be removed or not, it was much disputed. Mr. Stanley has written an excellent paper on the subject in the eighth volume of the *Medico-Chirurgical Transactions*, in which he gives three cases in which the tumour was removed by excision. Some difficulty was experienced in arresting the hæmorrhage. In the first and third cases the result was unfavourable; the second recovered. Mr. Stanley looks upon the fungus, not as a mass of coagulum, but as analogous to the substance of the brain itself. Mr. Carmichael said that it appeared to him, however, of very little consequence, whether the fungus was removed or not, for it was not the fungus but the amount of injury done to the brain, which killed the patient. Mr. Carmichael showed two drawings illustrative of a case which had occurred at the Richmond Hospital, and referred to another, in which the fungus had been removed by the resident pupil. In the case which he had just detailed, the fracture extended to the base of the

skull as far as the occipital foramen. There was also a considerable effusion of blood in the substance of the temporal muscle, and considering the amount of injury done, it was surprizing how long the man lived.

5. *Scrofulous Tubercles on Serous Membranes.*—Dr. Lees exhibited a specimen taken from the body of a child about two years' old, of a strumous diathesis, and whose father had died of phthisis. The child had been subject to cough, and had been losing its health since it was ten or eleven months' old. About a month ago, it caught a fresh cold, followed by exacerbation of the pulmonary symptoms, and died about two days previously. In the lung exhibited by Dr. Lees there was extensive tubercular development, and on the surface of the pleura, particularly where it corresponded to the ribs, there were deposits of scrofulous matter in the form of small round tubercles. The second case was that of a child, who was about four years' old, and got spotted fever about six months since, from which it never perfectly recovered. About a fortnight back, it got an accession of fever with cough, and the symptoms of that form of pneumonia which accompanied tubercle. Every plan of treatment proved ineffectual, the child sank with great rapidity, and died two days previously. On dissection, the pleura presented a very remarkable example of strumous degeneration. On the surface of the lung a cavity was found which at first appeared to be in the substance of the lung itself, but on more accurate examination it was found to be external to it and formed in the false membranes which covered the pulmonary pleura. The lower portion of the lung was infiltrated with tubercular matter.

6. *Multilocular Aneurism of the Thoracic Aorta.*—Dr. Law said the specimen before him was one of aneurism of the aorta. The patient, a man about forty-three years' old, was admitted into Sir Patrick Dun's Hospital about five months since. He complained of violent pain in the left hypochondrium and epigastrium; at the time of admission this was so intense as to oblige him to rest with his knees up to his chin. The history of the case was very imperfect and unsatisfactory, as the man gave a very vague account of his symptoms, and the only thing that could be learned from him was, that he had been for the last two years subject to two kinds of pain, one of which was constant. He also had pains along the course of the ribs, and described a central point in his chest from which the pains radiated on every side. On the third day after admission he began to complain of dysphagia. On examining the chest, Dr. Law found the respiration more feeble on the left than on the right side; he complained of nipping pains in various parts of the left side, and when Dr. Law attempted to introduce a probang, he found its passage arrested about four inches below the opening of the fauces. The nipping pains, the dysphagia, and the dulness on percussion in the left side, with the fulness of the veins of the neck, led Dr. Law to suspect that it was a case of thoracic aneurism; but this was by no means certain, there was no bruit de soufflet heard over the region of the heart, or where the aneurism was supposed to be seated, and

the diagnosis remained undecided until the appearance of a pulsating tumour on the left side of the back, between the spine and the posterior margin of the scapula, set the question at rest. The appearance of this tumour was attended with increase of the pains along the course of the ribs, and on making an examination, a strong pulsation, accompanied by a distinct bruit de soufflet, was evident, the latter to be heard at various points of the chest and masking the respiratory murmur. His breathing was tolerably free, except that it was a little more feeble on the left side, and inspiration was longer than natural, as if something was pressing on the trachea. He could not swallow when in the recumbent posture, and always took his food and drink sitting up in bed with his body bent forwards and to one side. Sometimes the difficulty of swallowing was referred to the top of the sternum, sometimes to the epigastrium, and he complained at one time of pains in the chest, at another of pains in the epigastrium and hypochondria; in fact, his symptoms were so numerous and so variable that Dr. Law was convinced that the presence of a single aneurism would not be sufficient to account for them. At the end of about four months, he was beginning to feel considerably exhausted; the tumour on the back was now greatly increased in size; it had destroyed the ribs, protruded on the back, and was covered merely by the skin and muscles. When examined, it communicated to the finger a sensation as if its contents were fluid. About the end of the fifth month the man died, partly from exhaustion and partly from excessive secretion into the bronchial tubes. On dissection, a very interesting specimen of multilocular aneurism was discovered; it was of great size, and extending equally on both sides of the spine. Dr. Law said that he had omitted to mention that the pulse at each wrist was nearly equal. In front of the tumour lay the lungs, and this accounted for the absence of bruit de soufflet in the early stage of the disease, the lung overlapping it in such a way that the respiratory murmur completely masked every other sound. The aneurismal tumour seemed to consist of three portions, one to the left, which was filled with fluid blood, another lower down, in front of the spine, filled with a loose clot, and a third portion to the right of the spine, containing a dense firm coagulum. Dr. Law thought it probable that the disease commenced originally in the right side, and extended afterwards to the left, and that it was this latter portion which had been diagnosed during life. The sac had exercised a slight degree of pressure on the trachea, and on the lung, particularly at the left side. There was no symptom of paralysis. The first symptom was derangement of the stomach and digestive system, and this was followed by the radiating pains and difficulty of deglutition. It was these pains, and the recollection of other similar cases attended by analogous symptoms, which led Dr. Law to suspect the existence of aneurism, for until the tumour presented itself posteriorly between the scapula and the spine, it was impossible to determine its nature with accuracy. Dr. Law said that as the preparation had been only a few hours in his possession, he had not been able to examine it as minutely as he wished, and hoped to be able to bring it more fully

before the Society at the next Meeting. (*Museum, Sir Patrick Dun's Hospital.*)

Fourteenth Meeting, March 6th, 1841.

Professor HARRISON in the Chair.

1. *Ossific Deposits in the Arterial System. Gangrene of the Feet.*—Mr. Hamilton exhibited the recent parts in this case, the subject of which had arrived at the advanced age of 101. In the aorta, there were several bony plates between the internal and middle coats; in some places the internal coat had been destroyed, and the bony plates projected into the cavity of the vessel; the osseous deposits were most abundant at the bifurcation of the arterial trunks. Examples of this were shown in the cæliac axis, and in the arteries of the upper extremities. Mr. Hamilton pointed out the diseased condition of the subclavian, vertebral, and coronary arteries. The subject of the case was a dairyman, named James Stewart, who was attacked with gangrene of the toes about seventeen days before death. Mr. Hamilton saw him on the fifth day. The toes, as represented in the drawing, which Mr. Hamilton exhibited, were black, dry, and shrivelled, and the integuments beyond the sphacelated parts were of a dark chocolate colour. An attempt was made by nature to arrest the gangrene, but it failed, and the disease continued to spread until a few days before death. The dorsum of the foot was pale and cold, and stripped of epidermis to a considerable extent; on the sole there were several livid vesicles filled with serum, there was very little pain, but the tenderness on pressure was very great. The man sunk gradually, and died on the seventeenth day from the first appearance of the disease. Mr. Hamilton observed that Pott, who first described this affection, appeared to be ignorant of its true pathology; for he denies that an ossified state of the vessels is the cause of the disease. The researches, however, of Cruveilhier and Carswell have proved that an ossified condition of the vessels is one of the most frequent causes of the disease, and that in most cases of the kind the arterial branches are found to be more or less engaged. In some of these cases the progress of the morbid change can be very satisfactorily traced. In addition to ossification of the artery, and disease of its internal coat, the latter is very often absorbed at various points, the bony spiculæ project into the cavity of the vessel, and around these projections the fibrin of the blood coagulates, giving rise to a gradual obstruction and ultimate closure of the affected tube. This afforded some explanation of the way in which the arteries were plugged up, but would not account for the absence of circulation in the foot, unless the smaller vessels were also obstructed, which actually was the case. Mr. Hamilton showed one of Carswell's plates, in which the same appearances were observed as in the preparation which he had laid before the Society. In the plate were seen several bony spiculæ projecting into the cavity of the vessel, round which deposits of fibrin had taken place. In Stewart's case, Mr. Hamilton observed that in tracing down the femoral artery, the same changes would be seen, as he had previously pointed out in the aorta. In some parts, the coats of the vessel were greatly

thickened, in others studded with bony plates, and the whole artery felt like a hard cord, its cavity being narrowed so as barely to admit the end of a straw at the upper part. Lower down, the calibre of the vessel was still farther reduced, and the popliteal, immediately before it divides into the tibial and peroneal, was completely obstructed. The opposite femoral artery exhibited similar changes. A curious fact connected with this case was, that in both extremities, the peroneal and anterior tibial arteries were both longer than the posterior tibial, and it was remarkable that the same condition has been delineated by Cruveilhier; in both extremities the arterial trunks were obstructed from the ham down to the toes. Evident traces of the same morbid process, but not amounting to obstruction, were to be seen in the innominata, subclavian, carotid and vertebral arteries, all of which presented thickening and erosion of the internal coat, with small deposits of bony matter, the disease being chiefly seated at the point where the trunk of the vessel divided into branches. The patient in this case had gangrene of both feet. His pulse was about 104, and very feeble.

2. *Diphtheritis.*—Mr. Adams said, he wished to lay before the Society some cases and specimens of diphtherite, a considerable number of which had been recently under treatment at the Richmond Hospital. Several cases had occurred in that neighbourhood, particularly among the members of a poor family, living near the Royal Canal. The place he alluded to was below the level of the canal, extremely damp, narrow, and ill ventilated, and the inmates, who were very poor, were crowded together in small, comfortless apartments. The disease had made its appearance among them after scarlatina, and as they did not apply for medical aid until very far gone, three of them fell victims to it. The mucous membrane of the palate, fauces, and larynx formed the chief seat of the disease. In the first case (of which a preparation was exhibited) Mr. Adams observed, that the disease presented the phenomena of ordinary croup, except that it was not limited to the windpipe, and, in passing upwards, it would be seen, that the epiglottis, the whole of the pharynx and fauces, were also engaged, all these parts being covered with a greenish-yellow false membrane, somewhat like that found in croup. In another case, that of a child named Lawler, aged 19 months, Mr. Adams found the little patient in its mother's arms, in a semi-comatose state, with its eyes closed, and apparently moribund. Around the margin of the nostrils the skin was excoriated, the excoriation spreading upwards to the inner canthus of the eye. From what Mr. Adams has seen of the disease, he was convinced that it affects the nostrils as well as the fauces. In most cases there is a constant discharge of mucus from the nose, and the nostrils are frequently excoriated. There is also general tumefaction of the external fauces, and the glands in the submaxillary region are more or less tumefied. The patient suffers from dyspnœa, and, on looking into the throat, the mucous membrane is found to be covered with a false membrane, of a dirty-greenish white colour. The history of the child Lawler was, that for about a week before, its tongue had been very foul, and its appearance sickly. The night before admission, it was seized with

symptoms of dyspnœa, which went on increasing until death, which took place about twenty-four hours after it came to Hospital. Another child, who came from the same place, presented the whole of the fauces and uvula covered with false membrane. Mr. Adams observed, that the false membrane was still visible on the posterior surface of the soft palate, and that the fauces presented the appearance of being in a state of slough. One of the most striking circumstances connected with the case was, that where the false membrane had been rubbed off, the surface of the mucous membrane was of a bright red; where the diphtheritic effusion remained, it was of the usual dirty white colour, with a tinge of green. There was another case, in which the disease engaged the trachea and larynx, producing so much distress and dyspnœa, that Dr. Hutton, under whose care the patient was, thought it advisable to perform tracheotomy. The operation was performed, but did not succeed in saving the woman's life, she having survived it only thirty-six hours. Mr. Adams observed, that any one who examined the preparation, would perceive that the diphtheritic exudation differed considerably from the false membrane of croup, the latter being generally thin and uniform, the former thick and loose. The last specimen he had to present was one of diphtherite, engaging the œsophagus. This presented a cylinder of lymph, about eight inches in length running down the œsophagus, upon which it was accurately moulded. This cylinder had been thrown up during life, and had been preserved by Mr. Smith; the patient did not live many hours afterwards; where it lay, the œsophagus was of a bright red colour. According to Mr. Adams's observations, diphtherite may occur in the throat, pharynx, œsophagus, larynx, and trachea; it also attacks the uvula and soft palate, and not unfrequently extends into the nares. He thought also that it might prove fatal, by running down the œsophagus into the stomach and intestines, without engaging the larynx or trachea. A case of this kind was, some time back, under the care of Dr. Hutton, which terminated in ulceration and perforation of the intestines. Mr. Adams said, he would beg leave to refer for a very good description of the disease to the works of Dr. Fothergill, by whom it has been termed putrid sore throat. Fothergill has described most of the forms of diphtherite mentioned by Mr. Adams, but does not seem to be aware of its true pathology; for he looks upon it as a sloughing sore throat, an opinion disproved by the fact; for, when the diphtheritic exudation has been rubbed off, or detached with a probe, no erosion or destruction of the mucous membrane can be discovered. The group of symptoms and pathological phenomena given by Fothergill, prove that the cases he has described were cases of diphtherite. Among these are difficulty of breathing and swallowing, swelling of the neck and throat, with enlargement of the glands, fever, with an aggravation of the symptoms at night, discharge of putrid sanies from the mouth and nose, extreme difficulty of breathing, and harassing cough. Some of the patients died with symptoms of coma, others from epistaxis, others from instantaneous suffocation. In some, sphacelus of the œsophagus, extending down into the stomach, and

of the trachea, extending down into the lungs, was observed. A fetid ichor trickled from the nostrils, sometimes accompanied by a discharge of blood. The disease generally terminated in fourteen days, and when a family was attacked, two or three of its members were usually carried off. Mr. Adams said, that from this description it was plain that diphtherite was the disease Dr. Fothergill had described, and, from what he had seen of it himself, he could confirm the accuracy of the description. (*Museum, Richmond Hospital.*)

3. *Aneurism of the Thoracic Aorta.*—Dr. Law said, that at the last Meeting of the society he had brought forward a specimen of aneurism of the aorta, but as the preparation had fallen into his hands only a few hours before the Meeting, he had not had an opportunity of examining it with sufficient accuracy. He had stated on that occasion, that on the right side the aneurism formed a firm solid tumour of an oval shape, while on the left side of the spine, there was another tumour, somewhat of the same shape, but larger, and containing, for the most part, fluid blood; in fact, there were two tumours, one on each side of the spine, while a third lay in front of the vertebral column. Dr. Law said, that he had merely given the symptoms at the last Meeting, as he had not had sufficient time for examining the aneurism; it would now be seen, how far these admitted of an explanation. He had stated that the tumour projected on the left side, between the posterior costa of the scapula and the spine, and it would be seen that this had been effected by destruction of the bodies of the four upper dorsal vertebræ. It would also be perceived, that the aneurismal sac had encroached on the cavity of the chest, so as to exercise a considerable degree of pressure on the lung, a fact that would account for the partial feebleness of respiration, particularly in the left side. On examining the aorta, just below the termination of its arch, three circular perforations were discovered. Two of these communicated with the sac in front of the spine, while the third ran downwards, and, dividing into two portions, made its way into two cavities (above described), one on the right, the other on the left of the spine. One of these cavities was filled with a firm laminated coagulum, the other, in addition to some coagula, contained a quantity of fluid blood. With respect to the symptoms, Dr. Law observed, that the sensation of stuffing in the chest, so often complained of by the patient, was accounted for by the pressure exercised on the lung by the aneurismal tumour. He had complained also of nipping pains, extending in the direction of the ribs, which might be explained by the pressure on the intercostal nerves. One of the principal sources of annoyance to him was the difficulty of swallowing, and it would be seen, on examining the preparation, that there was a small aneurismal tumour pressing on the œsophagus; in fact, there was a distinct series of aneurisms, there being not less than six along the course of the aorta, commencing a little below where the left subclavian is given off. When the man came into hospital, he complained chiefly of pain in the epigastrium and sides, and his symptoms were more like those of dyspepsia than of any

other disease. Dr. Law thought that this might be owing to pressure on the par vagum. It is well known, that the irritation caused by pressure of an aneurismal sac, on this nerve will be reflected upwards, producing an affection of the voice and spasmodic dyspnœa; but here the function of the nerve, as connected with digestion, was more likely to be disturbed, in consequence of the aneurism being seated lower down. The man had been under the care of several medical men, but no suspicion of aneurism was entertained. There was no *bruit de soufflet* at that time either in the heart or the aorta, and Dr. Law was led to look upon it as a case of aneurism, partly from the nipping pains, and partly from the presence of dysphagia. (*Museum, Sir Patrick Dun's Hospital*).

4. *Enlargement of the Muciparous Glands.*—Dr. Lees said that the parts before him were the stomach and intestines of a child about seven months' old, who had been brought to him two days previously, in a very low state. The mother stated, that up to the preceding Monday, the child had been healthy, and that on that day having been exposed to cold, it had been attacked with colliquative diarrhœa. She did not seek any medical advice for it on that or the following day. On Wednesday, it was seized with vomiting, but the diarrhœa appeared to be checked. It did not pass anything from its bowels on that or the following day, but the vomiting still continued. When seen by Dr. Lees, the child was exactly like a patient in cholera; its face was pale and shrunken, and its extremities cold; in fact, it appeared moribund, and died in the evening. The vomiting had been constant for two days before death, but it had no pain or swelling of the abdomen. On examining the brain, no obvious trace of disease could be detected. The stomach seemed to be congested and more vascular than ordinary, but the mucous membrane appeared firm. The lower portion of the intestine was deserving of notice. The colon and rectum were thickened and vascular; and the muciparous glands were developed in a very remarkable manner. Commencing at the cœcum and extending along the lower part of the ileum, these glands were so much developed, that they presented appearances very like those of follicular enteritis.

On Gouty Concretions, with a New Method of Treatment, by Alexander Ure, Esq., M.D.—Mr. Ure observes that it is well known that persons afflicted with gout are liable to the effusion of a white liquid into many of the internal cavities of the body. This liquid consists of serum and urate of soda, with sometimes a little urate of lime. In the course of time, the serous particles become absorbed, leaving a kind of soft clayey residuum, which afterwards becomes hard and friable; thus forming the so-called tophaceous concretions or chalk-stones.

Gout may be regarded as a specific inflammation which seems to affect the serous and fibrous structures. Accordingly, we find that the above depositions most generally take place in the cavities of joints, in the bursæ mucosæ, in the ligaments, neighbouring

aponeuroses and cellular membrane, and in the periosteum. They have even sometimes been met with between the cutis and cuticle.

The effusion from which these concretions are derived, occurs not only during fits of gout, but likewise in the intervals; and as the extremities of the body, particularly the hands and feet, are the principal seat of the disease, it is there that the greatest accumulations take place. They occasionally, however, make their appearance about the articulations of the jaw and spine.

Although this process is usually preceded and accompanied by inflammation, yet there is no extravasation of coagulable lymph, no new covering or cyst surrounding the concrete matter—like pus in an abscess. A circumstance which distinctly proves that the inflammation is not of a phlegmonous character, and that the non-absorption of the deposit is to be ascribed to physical causes.

Gouty tophus is not confined to man; it occurs also, though more rarely, in animals, when placed in a similar condition, that is, when fed for a length of time upon a highly azotised diet. Aldrovandi has detailed its effects in birds of prey, more especially in hawks. Gout-stones sometimes attain a very great size. Now, says Mr. Ure,

"Since one part of urate of soda requires about 4000 parts of water to dissolve it, it may be reasonably assumed that the refractory nature of the above deposits is due to their very sparing solubility in the fluids with which they come in contact. It therefore occurred to me as a consequence deduced from some researches into the composition of the renal secretion in certain of the lower animals, that some means might be devised to enable us through the medium of the circulation so to modify that secretion in man as to supersede, for a time, the urates altogether.

"The graminivorous animals, as the horse and cow, secrete from the kidneys a peculiar acid (the hippuric). It is present in their urine combined with soda. Now, the hippurate of soda, which may be considered the analogue of the basis of gout-stones, is an exceedingly soluble salt (requiring only two parts of water, at 60° F., to dissolve one), as are likewise the hippurates of potash, of ammonia, and of lime. Hence it appeared probable that were we to adopt such therapeutic measures as would determine the human kidney to secrete this acid instead of the uric, we should thereby, in all likelihood, control and prevent the deposition in question.

"I ascertained in the course of last summer, by repeated experiments, made first of all upon myself, and afterwards upon individuals labouring under gout, that the above substitution could be perfectly accomplished without the slightest risk of affecting the general health, or of irritating the urinary organs. The substance employed for this purpose was the benzoic acid. If an hour after a meal, a scruple of this acid be taken into the stomach, in the course of a couple of hours subsequently the urine voided, amounting to five or six ounces, will be found, on adding a small quantity of muriatic acid, to yield a copious precipitate of beautiful rose-pink acicular crystals, which weigh,

after being allowed to settle for a day, about fifteen grains. This quantity is by atomic computation equivalent to little more than one-half of the benzoic acid expended, so that the remainder must have made its escape by some other emunctory, probably the skin.

"The above crystals, when examined by the microscope, display the characteristic form of the hippuric acid, namely, a four-sided prism, with a dihedral summit.

"It may be observed, that no trace whatever of uric acid, or of any of its salts, or of benzoic acid, could be discovered in the above urine.

"A nearly analogous result is obtained when benzoate of ammonia or of potash is administered; and under particular circumstances, the exhibition of one or other will be found preferable to the simple acid; either in the neutral state, or with an excess of base, when there is a disposition to acescence in the *primæ viæ;* apportioning the dose, in every instance, to the condition of the urinary secretion, previously ascertained by analysis.

"By this singular interchange of elements, capable of being effected only by the aid of vital chemistry, we have an organic acid, containing 8 atoms of azote and 10 of carbon, replaced by one containing no less than 18 of carbon, and only 2 of azote, and that even in what various eminent pathologists regard as a highly azotised state of the system.

"It is obvious that this new plan of treatment, and which does not interfere with other remedial means, must be steadily persevered in for a considerable length of time, ere any adequate benefit can ensue. How far it may be applicable to various forms of calculous disease, connected with the gouty diathesis, remains for future investigation to decide. Most unequivocal proofs have already been afforded me, of its efficacy in correcting and removing certain disordered states of the urine in individuals prone to attacks of gravel."—*Medico-Chirurgical Review*, January, 1842.

History of a Case of Phlebitis, with Observations, by Thomas H. Silvester, M. D.—Case.—Mr. P., æt. 59, observed on Friday evening, March 27th, a pimple on his upper lip, which he supposed to have arisen from a scratch in shaving. His friends noticed him carrying his pen, whilst engaged in accounts, transversely between the lips. He had been using a steel pen, and a new metallic ink, and it appeared to them that this fluid had accidentally come in contact with the wound, and imparted to it the peculiar deep-red irritable aspect which was very observable. On the following Tuesday the patient retired to bed early, complaining of general uneasiness, but neither fever nor headach were present, and he slept well. Dr. S. saw him, for the first time, the next day (Wednesday), his pulse was 120, small and weak, the skin cool, and he did not complain of thirst. The countenance was inexpressibly anxious, not unlike that of a person who has taken poison, or one who has been stabbed in the abdomen; the lip was greatly swollen, and he suffered more from a feeling of distention than from pain. So much difficulty was experienced in the attempt to open the mouth, that it became next to im-

possible to ascertain the state of the tongue; another hindrance arose from the tumified overhanging lip, beyond which the tongue could not have been projected had no other impediment existed. The tumefaction extended a little way upwards on each side of the alæ nasi, but not at all downwards towards the lower lip; it was of a dark red, almost livid hue, and very firm to the touch. There were no vesicles nor bullæ, nor œdematous appearances on pressure; the pain was of a distending, and not of a burning kind. The affection so resembled the asthenic form of erysipelas, that Dr. Silvester determined upon tonic treatment. The patient was desired to take from four to six ounces of port wine in boiled sago during the twenty-four hours, and three grains of the disulphate of quinine every four hours. This mode of treatment seemed to promise the best effects,—the pulse became fuller and stronger, and the swelling ceased to spread,—the lip itself was cool, but of an immense size,—a glutinous exudation, which now appeared on its surface, thickening gradually from day to day by fresh additions, assumed at length the appearance of a coarse scab, with rocky projections, so perfectly inflexible, that not even the slightest movement of the lip could be effected.

The gums and the interior of the mouth generally, were seen to be of a dark livid hue, and viscid saliva flowed unceasingly over the neighbouring parts, occasioning soreness and excoriation. On the fourteenth day of the disease, the skin was cool and perspirable, the pulse 80, still rather feeble, the lip was nearly free from uneasiness, although much swollen and thickly encrusted: the patient had slept well the previous night, he was enjoying, with a good appetite, his sago, and believed himself to be rapidly recovering. Dr. S. observed on the very next day a large red cord, apparently terminating in a vein extending upwards at the side of the nose as far as the inner angle of the eye, first on the left, and afterwards on the right cheek. These inflamed vessels greatly resembled irritated absorbents, but they were of much larger size than the latter, being as big as a goose-quill, even whilst no fluid could be detected in their interior by the touch. After the lapse of five or six days, fluctuation was distinctly perceptible, and Dr. S. then noticed at several points in the course of these suppurated veins, a slight degree of redness. These red spots became the seat, each of an exudation precisely of the same character and appearance as that which had previously been observed on the upper lip. A viscid liquid at first escaped, and this, either hardening, or being succeeded by a secretion of thicker consistence, a series of projecting masses, somewhat larger than a horse-bean, of a yellowish green hue, not unlike the scabs of rupia, appeared along the course of the vessels. On one of these scabs or exudations being loosened from its seat, at a subsequent period, pus continued to flow for several days from the part which had received the violence. Another, which had escaped injury, and maintained its position up to a period within one week of the patient's death, dislodged itself spontaneously from the depression between the eyebrows, which situation it had occupied, leaving the parts underneath perfectly sound and healthy, but rather redder than natural.

On the twentieth day of the disease the veins of the forehead had begun to swell, and in a very short period they were to be seen, in great numbers, ramifying all over the forepart of the head, and extending beyond the vertex, presenting a most extraordinary appearance, difficult for the pencil to pourtray. The skin and cellular membrane occupying the spaces between the several inflamed vessels seemed at this stage of the complaint to be almost wholly unaffected, and owing to this circumstance, the veins themselves were highly prominent and easy to be distinguished from any other order of vessels. A process similar to that which had taken place in the veins of the lip and face, occurred in those of the scalp, namely, exudation of a glutinous fluid, and incrustation in some instances—resolution and suppuration in others.

The incrustations became loose invariably on the application of a poultice, and quickly fell off. The interior of the vein was thus exposed, and a long, irregular, ulcerated cavity formed.

The vessels which were opened with a lancet emptied themselves gradually of their contents—pure laudable pus for the most part—and neither exudation of the thin gelatinous fluid nor ulceration took place.

On the 21st of April, skin cool, pulse 82, feeble but regular. 24th—the pulse had suddenly risen to 100, extremely feeble.

On the 6th of May the patient seemed to have had a shivering; it was however very slight: he had likewise vomited after his usual night dose of Syr. Papav. 8th—greatly excited after a dose of Morph. Hydro-chloras gr. ss. 26th—the patient expired, perfectly rational to the last moment.

Autopsy.—The body greatly emaciated; on turning back the scalp, which was so fragile and perforated by ulceration that it tore, and yielded to the slightest touch, the diseased veins were seen, meandering over the internal surface, filled in some part of their course with a yellowish crumbling, fibrinous mass, the smaller branches containing fluid blood of a pale colour, in minute quantity, and a single trunk of the temporal on the left side terminated in a foyer filled with laudable pus. On slitting open those veins which, during life, appeared restored, or nearly so, to their natural condition, they were found perfectly empty, rough and irregular in their interior, apparently deprived of their smooth lining, and their calibre greatly increased. The shrunken attenuated muscles were cut into and examined in several parts of the body, but no deposits of pus could be detected. The lungs, liver, kidneys, and brain were in a healthy condition, but bloodless. The heart and larger vessels entirely empty. The joints were not examined internally, but they evidently contained no fluid. The patient had not complained of pain or uneasiness in the limbs, and had even walked across the room a few days before his death.—*Ibid.*

[The details of this instructive case are quite sufficient to prove that phlebitis is essentially a disease perfectly different from phlegmasia dolens].

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Observations on the Treatment of Hare-lip, illustrated by Engravings of two successful Cases.* By JOHN HOUSTON, M.D., M.R.I.A., Surgeon to the City of Dublin Hospital; Consulting Surgeon to St. Peter's Dispensary; Lecturer on Surgery at the School of Medicine, Park-street; Member of the Society of Naturalists and Physicians at Heidelberg, &c. &c.

[Communicated to the Surgical Society of Ireland.]

I AVAIL myself of the two following cases of complicated hare-lip which occurred in my practice during the past year, to afford me an opportunity of speaking of the mode of treatment, which in these, as well as in several other instances of the same kind, I have found very efficacious. The subject of hare-lip may appear to be a hackneyed one, but if an observation be taken of the number of attempts made to remedy such deformities, without accomplishing the task to the satisfaction of all parties, it will be admitted that we have not yet reached perfection in this department of the art; and that, therefore, an account of any

method attended with particular success, even in a few cases, cannot fail to be, in some measure, instructive.

CASE I.—*Double Hare-lip, with double Fissure of the hard Palate.*

Mary Fox, admitted into the City of Dublin Hospital, June, 1841, two years and a half old, and the fourth child of a robust, healthy mother. The first child of this woman had been born with the same deformity, the second and third were well formed at birth. The central piece of the lip (see Plate I. fig. 1) was broad at the base where it was attached to the root of the septum nasi. It was nearly the whole depth of the lip, and stood forwards and somewhat to the left. The sides of the lateral fissures were continued nearly into each corner of the mouth, inferiorly, so as to leave very little red border to the lip: superiorly, that of the right side was continuous in the nose with a fissure of the hard palate, making, thereby, an open communication at this place between the face and the oral and buccal cavities: that of the left side did not enter the nostril although it approached very near to it. The central piece and sides of the fissures were thick, prominent, and fleshy. The tubercle of bone under the nose was attached to the osseous septum and left superior maxilla, but was separated from the right by a fissure. It was very prominent, and presented two distorted incisor teeth—one, large, projected nearly straight forwards; the other, smaller, stood to the right, over the deficiency between the bones. The hard palate presented an open slit on each side of the mesian line, distinctly double anteriorly, but running together behind, so as to make a common cleft in the soft palate.

On the 7th June, the operation was proceeded with, in the presence of Professors Benson, Hargrave, and Williams, and the resident surgeon, Mr. Orr. The child was rolled up in a sheet and laid on the operating table, a position in which a child of such an age as this patient can be held much more steadily for a delicate operation than it could be on the knee of an assistant. The edges of the fissures in the lip were first detached from the

bones by an incision with a scalpel through the mucous membrane—a step of much subsequent service in facilitating the stretching and approximation of the pieces of the lip after they have been duly pared at the edges. The outer layer of the projecting tubercle of bone was then removed by nippers, and the protruding primary teeth, together with the pulps of the secondary ones, lifted from their beds; the former, on account of their standing much in the way; the latter, as being, by the exposure of their pulps, rendered incapable of further growth. The bone was, thus, without being actually cut through at any part, rendered quite flat, and prepared for giving a level support to the future lip. The point of the central piece of the lip was then transfixed by a tenaculum, and held on the stretch whilst its sides were being trimmed with a strong, sharp scissors, somewhat like those of Dubois: a single cut on each side was sufficient—each passing sufficiently high to lay bare the whole side of the tubercle; and one, that last made, so conducted, that while cutting out the tenaculum it converted the rounded extremity of the projection into an acute angle. The central piece thus cut into shape, was of a length to descend about two-thirds down the lip, and sufficiently broad at top to make a good filtrum nasi. The lateral borders of the fissure were then excised in the same way. The scissors commenced by cutting on each side, inferiorly, so far towards the corners of the mouth as to remove completely the rounded angles which are always present in such cases between the vertical fissure and the lower red border; and completed the incision, superiorly, by forming, on the left side, an acute angle with the incision on the corresponding side of the central tubercle; and, on the right, by entering a short way into the nostril, so as to prepare the edges, there, for such an union as would lessen and make seemly the aperture into that cavity. There was no hæmorrhage deserving of notice beyond the ordinary jets from the coronary arteries.

The needles employed to bring the wounds together were two long, fine, woollen or darning needles tempered and filed at

the points to the shape of glovers'-needles (see Plate I. fig. 3). The lower was that introduced first: the point was made to penetrate the skin on the left side, about a line above the free edge, and two lines and a half to the outside of the vertical incision. From thence it was pushed slightly upwards and backwards so as to appear on the cut surface a little higher than the level of its entrance. It was then pushed through the opposite side in a similar, but reversed order, and brought out, there, at a point of the skin exactly opposite to the point of entrance. The two flaps glided readily towards each other on the long smooth needle, and when made to touch were found to fit with every exactitude, giving to the red border a straight edge below, and forming the lip into a level surface in front. The manœuvre of raising the point of the needle during its entrance insured a firmer hold of the flesh, and by pulling down the mucous membrane a little, added to the fulness of the lip at that part. The second needle was then introduced in a direction parallel to the first. It entered the skin close under the left nostril, passed through about half the thickness of the flesh of the lip, then traversed the central triangular piece and came out again under the right nostril. This needle was introduced in a directly transverse course, and not in an arched direction, as practised with the preceding one; and it was not allowed to pass altogether so deeply into the substance of the lip, as by such a disposition, a better seat was found to be given to the central tubercle. A high position was selected for this needle, with a view of closing the fissure into the right nostril as far as possible. Both needles being thus laid in, a thread of silk was twisted first round the upper one, and then another round the lower, several times, as in the figure of ∞ form, and both were made subsequently to cross in the centre between the needles, so as to keep the apex of the tubercle in its place, care being taken, however, not to pull them in any degree calculated to approximate the needles towards each other. It was found, that by tying the superior needle first, a better adaptation of all the parts of the

complicated wound, and a neater arrangement of the red border was accomplished than could be by the more usual mode, that, indeed, first attempted, of securing the lower needle as the primary step in the approximation. The peculiar length of the needles, by lessening their readiness to fall out of the wound, facilitated greatly the subsequent manipulations of the dressing, and rendered unnecessary the application of a ligature in either of them until the fitting place and direction for both had been determined upon. As final steps, the projecting ends of the needles were nipped off, little rolls of sticking plaster were applied to their stumps, and the cheeks were drawn and held forward by adhesive straps, so as to take off all stress from the needles. No further dressings were applied.

After the operation the child fell asleep. During the succeeding days there was slight feverishness, indicated by heat of skin, restlessness, and loss of flesh; but the little patient continued throughout to take soft food, and nothing occurred to create any apprehensions regarding the certainty and perfection of the union. In seventy-two hours the dressings and needles were removed; and in order to render this process the more easy, a light poultice had been laid over the whole for about six hours previously. The union between the wounded surfaces was found to be complete in every part, even so as to give a perfectly straight edge to the red border below; and, superiorly, to close the right fissure a little way inside the nostril. The central piece lay on the same level with the lateral pieces, and had become united to them to its very point, from which, down to the free edge of the lip, the lateral pieces had grown together by a broad, firm, and perfect adhesion. Simple dressing was applied, and the newly established union carefully protected against all lateral dragging of the cheeks, by the use of adhesive plaster. The child partook abundantly of food, and in a fortnight left hospital—the incisions, the needle marks, and even the wounded gums inside, being all most satisfactorily healed. The unseemly breadth of the nose was also much reduced; and

the mother had the great satisfaction of observing that solids and even fluids were swallowed without the least regurgitation by the nostrils. The second figure in Plate I., gives an accurate representation of the appearance of the mouth and nose of this child at the time of leaving the hospital; and, that it does not in the least exaggerate the amount of improvement effected by the operation, the child still lives to bear testimony.

CASE II.—*Single Hare-lip, with double Fissure of the hard Palate.*

Maria Byrne, three months' old, recommended by Doctor Nicholson, of Rathdrum, was admitted into the City of Dublin Hospital in December, 1841. She was the first offspring of young and healthy parents. The fissure of the lip was on the left side and single, but very deep and wide—(see Plate II. fig. 1). Superiorly it entered the nostril, and inferiorly was so much spread towards the corners of the mouth as to leave very little free red border to the lip. The palate bones were doubly cleft; the fissure on the left side opening forwards on the face; that on the right closed in by the superior maxilla and osseous septum of the nose. Where visible through the defect in the lip, the right margin of the fissure was observed to project considerably over the left margin. The child was full grown, healthy, and in all other respects well formed. Professors Benson, Williams, Hargrave, and Beatty, with Mr. Orr, assisted at the operation, the manipulations of which, as resembling those practised in the foregoing case, with the exception of the management of the central pieces, need not be again stated. The infant, in this instance, after being rolled in a sheet, was placed sitting on the knee of an assistant, with its head resting against his breast; a posture preferable to that on the back, in infants, when so young as to be unable to shake the body and head by the convulsive movements of their feet. As one piece of the bone projected so far that the lips, even in their natural state, could not be drawn over it, its outer layer, together with the pulps of two teeth, were removed as in the former case, so

as to make a flat, even surface for the support of the future lip. The remaining steps were completed with the same scissors and needles as above recommended, and the use of them was found so far to facilitate the performance of the operation, that all was finished in less than five minutes. The lower needle was made to take such a position that its point, in crossing from the one incision to the other, filled up the open mouths of the coronary artery, and thereby stopped all bleeding from that source. The upper took its hold so near the nose as to close the fissure in the nostril and secure adhesion in that direction. The crossing of the ligatures between the two needles held the central parts sufficiently in proper and equable apposition to render unnecessary the use of a third needle, although the upper lip in this infant of only three months was longer, as shown in the plates, than that of the child of two years and a half. The patient appeared to suffer but little from the operation. It took milk from a spoon, at intervals, afterwards; and a slight feverishness, such as occurred in the preceding case, was the only disturbance which supervened.

The needles were withdrawn at the expiration of sixty hours, and came away easily, having been previously loosened by suppuration. The adhesion was firm and accurately correct in every part. There was not a single point where freshly-cut surfaces had been brought into apposition, at which complete union had not taken place. The amount of tumefaction in the parts so circumstanced was very inconsiderable; showing, that the inflammatory action by which the union was accomplished, had been moderate. On the very day, however, on which the needles were removed, the infant was seized with an acute bronchitis, which lasted for three days, to the imminent risk of its life; nevertheless, the union held its ground, and after the subsidence of the attack, a healing action came over the needle marks, when all rapidly got well. The child was removed from the hospital in a fortnight, with the improved appearance of countenance represented in the second figure of second Plate.

The following extract of a letter from its father, dated February, 1842, speaks of it after a lapse of two months:

"Sir,—Agreeably to your directions, I beg to inform you that our poor little child is doing remarkably well. The operation has been so complete, that a person unacquainted with its previous state would not suppose that any thing had ever been amiss with it. The mouth has also assumed its proper colour, and the lips close perfectly. The cough she had is much better, though not quite well," &c.

Observations.—The primary cause of such imperfections as these, has not yet been ascertained to the satisfaction of all parties. Beclard, Blumenback, Meckel, and others consider the different varieties of hare-lip to be the results of an arrest of development. Regarding the upper lip as formed originally of three pieces—a central and two lateral ones—they look upon the single hare-lip, which almost invariably occurs to one side of the mesian line, or the double hare-lip, which is but the combination of two single ones in the same individual, as the persistence of one or both of the primitive fœtal fissures on the lip. On the other hand, Velpeau, Cruveilhier, and Dupuytren regard such theory as erroneous, and consider hare-lip to be, like most other monstrosities, the result, rather, of some diseased action. Velpeau, in particular, denies that the lips are formed of several pieces at the age of three, four, or six weeks, any more than they are at three or four months; and I may here state, that although I have made numerous examinations to inform myself on this point, I have never been able to observe in the fœtal mouth, even at the youngest age at which it was visible to me, any deviation from a simple oval or circular form in the aperture. Be this, however, as it may, there is one circumstance connected with its organization of considerable practical import, and which was first pointed out by Louis, namely, that the defect, whether it be single or double, is not accompanied with any loss of substance in the lip. The edges, for some distance around, are fleshy and prominent, as truly represented in

the Plates, a condition which, whether it be the result of a shrivelling-up of the textures or actual thickening from disease, becomes highly advantageous to the operator, by enabling him to remove a considerable portion and still find enough left wherewith to make a perfect lip.

In respect of the particular period of life at which it might be considered most fitting and safe to undertake the operation for the cure of hare-lip, practitioners have not fully made up their minds. Some recommend the operation to be deferred until the individual has arrived at such an age as to render him conscious of the deformity, and on that account to enlist his acquiescence in promoting the views of the operator; until the flesh has acquired sufficient firmness to hold needles, and vitality enough to insure union; until abstinence from food can be borne for some days without detriment; and until the dangers connected with the first dentition has been passed over. It is urged, on the other hand, not only that these reasons in favour of delay are all more specious than real; but, even, that the period of infancy is, in many respects, preferable for this operation. It is said, for example, and with much truth, that the conduct of the grown-up child, being more influenced by fear of pain than by hopes of benefit, it becomes, from the moment it feels hurt by an operating instrument, the most unmanageable of all patients; that the healing powers, so far from being more feeble, are more vigorous in the infant than at a more advanced age; that, other circumstances being favourable, the flesh of the infant is sufficiently strong and resisting to give a hold to needles during the time necessary for union; that the presence of the dressings does not after the operation debar the infant from food, as when hungry it will gladly sup a little breast-milk, or other appropriate nutriment, without detriment to the process of healing; and that, as regards the epochs of dentition, and the dangers of convulsions during such periods, there is nothing more to be apprehended from them in the ope-

ration for hare-lip than for any other of the same amount to which a child may necessarily be subjected. As reasons directly in favour of the superiority of infancy over a more matured age for its being made the subject of this operation, it may be urged, that the parts recover themselves better afterwards, when early put to-rights, than when permitted to remain and grow up misshapen; that the lip in due time acquires fulness and pliancy; that the nose is prevented from assuming a spread out, ugly appearance; that the fissure in the palate, if such exist, closes greatly with the growth of the individual, if supported by a firm and perfect lip; that bad habits of speaking, such as nasal or guttural utterance, which, if once established, become irremediable, are averted; and lastly, that the feelings of parents are especially gratified, by having such deformity repaired before their infant has gone abroad into the world. It may also be added, that by removing such disfiguration from the face, before the child has become aware of its presence, it is spared the feelings of humiliation which the consciousness of such infirmity necessarily imparts, and which invariably gives a tone to the after-character of the individual.

But, although the balance of advantages be thus evidently in favour of an early operation, we have high authority for procrastination. Sir Astley Cooper, Liston, Syme, and others, recommend a delay until the child has reached at least the age of two years. On the other hand, Velpeau selects the first six months of life, or if that be passed, prefers waiting until the tenth or fifteenth year. The favourite period with Dupuytren was the third month. With such confliction among opinions so nearly balanced in weight, it is no wonder that there should be such a total absence of any general rule of practice on the point. It is, however, admitted by all that, as far as improvements in the physical and moral condition of the individual are concerned, the early operation, when successful, yields them most abundantly; and that, if the chances of success and the risks of life

were equal in the two cases, the early age would always be that chosen for the operation. And are not these in themselves good grounds for siding to the cause of the infant; for giving it a chance, even at a small amount of risk, of being made like to other persons, rather than permitted to live on with an entailment of a certain amount of permanent deformity? Are they not grounds for a general rule of practice authorizing an operation capable of effecting a given great amount of real good, even at the sacrifice of a few failures, instead of lending, by vacillation, a sanction to one which, to say the best of it, is never satisfactory, and which itself even does not offer any certain immunity from danger to life, or from a failure in efficacy? But, after all, it may be asked, is the danger from such an operation to an infant of three months so much greater than to one two years' old as is represented? Or is the difference so great that it should be made a bugbear against a beneficial practice in surgery? Such has not yet been proven to be a fact, nor am I disposed to credit the assertion of it. The case of the child Byrne stands as a good argument against the reasoning. I have operated likewise on others at the same age, with equal success in all, and never with a failure in any. I am, therefore, an advocate for Dupuytren's age of three months, as being that at which not only the greatest benefit may be done by operation, but that also at which there is, perhaps, as much exemption from failure or fatality as at any other. The operation may, no doubt, be undertaken either earlier in life or later, if circumstances require it, and with more or less of benefit; but the third month appears to me the most eligible period, particularly in cases where, as in the above, the infant cannot, from deficiency in the palate, take milk at the breast.*

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* At the Meeting of the Surgical Society at which the subject matter of this communication was made, Mr. Smyly stated a case in which he had, at the solicitation of the parents, operated on an infant, fourteen days' old, with perfect success.

And, since then, I have received from Dr. Dawson, of Dungannon, a gentle-

Respecting the question of preference to the use of the scissors or the bistoury in such cases, authorities are nearly balanced. Severinus and Louis among the ancients, and Syme and Liston among the moderns, recommend the knife; Desault, Dubois, and others, are in favour of the scissors; whilst Le Dran and B. Bell have recourse indifferently to one or other of these instruments.

The advocates of the bistoury maintain, that this instrument

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man of well-known practical experience and skill, the following letter, which, as corroborating my views of the great reparative powers of the flesh of the young infant; and, as proving both the safety and the advantage of an early operation in hare-lip, I take the liberty of inserting here:

"*Dungannon, March* 15, 1842.

"Dear Sir,—The observations made by you at a late Meeting of the Surgical Society, recal to my memory a case of hare-lip, with fissure of the palate, in which I operated when the child was only four days' old, with perfect success, and without a single untoward event. The operation was performed in the usual way, using a scalpel, however, instead of the scissors, to which you appear to give a preference. I had never before operated in any case of hare-lip before the child had reached the fourth or fifth month; but, from the ease with which the operation was performed in this case, together with its happy termination, I am fully determined, in all similar cases which may present themselves in future, to operate at soon as the circulation is fairly established. The child was born on the 21st, and operated on, on the 25th January, 1841. I saw it on Saturday last. The cicatrix is scarcely perceptible; and the sides of the fissure in the hard palate have become so much approximated together, that I intend, shortly, to make raw the edges and cause adhesion between them, which I flatter myself will be accomplished, so far, at least, as the soft parts are concerned. I should state, that the cause of my operating so early, was the fright which the mother sustained at (as she expressed it) the horrible appearance of the infant, and which induced the most alarming symptoms. I operated at her most earnest entreaty. This was her seventh infant. Nothing of the kind had occurred before in the family.

"If you think this communication of any moment, you may make such use of it as you please.

"Believe me, dear Sir,

"Your obedient Servant,

"William Dawson, M. D.

"*John Houston, Esq., M. D.*"

produces less pain and makes a neater wound, and one less disposed to suppurate than the scissors, assigning as a reason for the difference, that the division of the flesh by scissors being made more by a pressing than by a sawing motion, such results are likely to follow their application. On this head, Mr. Liston even goes as far as to write, that "paring with scissors is to be reprobated as an effectual means of preventing immediate union," whilst by the employment of the knife "bruising is avoided and union takes place rapidly." The experience of others does not, however, lead them to a full concurrence in the soundness of such views. Wishing to put the question as to the difference in the amount of pain from the instruments to the test, Bell operated on one side with scissors and on the other side with a bistoury, without giving notice to the patient of the difference. The patient when asked in which side he felt most pain, hesitated at first, and ended by saying that he felt most in that to which the bistoury had been applied. As to the comparative neatness of the wound made by a knife or scissors, the difference will, I believe, depend more on the hand that uses them than on any superiority of one instrument over the other; but to my mind the scissors is, under the circumstances, and when the parts are properly stretched, better calculated to make a straight and accurate incision than the knife, and to effect also that object in a much shorter space of time. On the third head, viz., the tendency of the scissors-wound to suppurate, I believe such to be a mere assumption, engendered in theory, and neither proved nor disproved by practice. Wounds made by scissors are certainly CAPABLE of union by the first intention, and failures in the attempt, when they do occur, will be usually found chargeable to some other cause than the falsity in principle of the instrument which inflicted them. I have, myself, used both instruments in this operation and with equal success; and whilst I make no objections against the knife, I give a preference to the scissors for the following reasons. They require no support but that given

to the lip by stretching it from the angle; they remove in an instant the precise amount required; their operation is not more painful than that of the knife; and, when sufficiently sharp and strong, they make a wound equally capable and certain of union by the first intention as one produced by that instrument. Fixing the lip to be divided, by a tenaculum passed into the angle is less formal than the plan practised by Dupuytren and Velpeau, of drawing a silk through it for the purpose, by means of a needle; and it is certainly preferable to that advocated by Liston and others, of holding it between the finger and thumb; for the latter becoming wetted during the operation lose the power of fixing the part with due certainty and precision.

Regarding the amount of lip to be removed, the more usual error fallen into is that of taking away too little. The incisions must be carried clearly to the outside of the rounded corners at the bottom of the fissure, as otherwise, no matter how perfect the subsequent union, a depression will ever after remain to tell of the original malformation; nor need there be great apprehension about the danger of removing too much, for it is singular how extensible the lip is in this affection, and how much it grows, in accommodation to its new condition. The annexed Plates will illustrate this point satisfactorily—the free edges of the upper lip being, in both, straight, and admitting equally of perfect apposition with those of the lower lip; and that such precaution is necessary, is shown by the fact, that in the great majority of hare-lips which, having at some former period been operated upon, catch the eye in the streets, the upward notch, leaving a tooth or two exposed, is that which particularly arrests the attention.

The treatment to which the central piece in double hare-lip is to be subjected, must vary with its size and form. The plan adopted in the case of the child Fox—a modification of that recommended by M. Gensoul as opposed to that of Louis and Heister, who operated only on one side at a time, succeeded

perfectly, and with a smaller number of needles than are usually employed ; as a single needle was found sufficient for holding the central piece in its place. Velpeau and others are in the habit of inserting, in addition to the large needles, several smaller ones, like insect needles ; or even of pinning the central tubercle to the bone, underneath, for the sake of greater security; but all such extra needles would appear to be not only unnecessary but prejudicial, as being calculated to irritate and inflame the already too tender flesh. The projecting piece of maxillary bone was treated as above described, viz., by paring off the outer lamina and removing the teeth ; because, the deformity which in both cases it presented was such, as could not be remedied by Desault's method of pushing it into place by a graduated pressure, continued for some days or weeks. Removing only a stratum of the bony textures lowered the projection sufficiently, while leaving a fit support for the lip when drawn over it by the needles. The fissures in the palate were, of course, left untouched, but with a hope of being assisted afterwards in their closure by the support given to them from the newly-constructed lip.

On the subject of needles, I may observe that the ordinary woollen needle appears to possess every requisite quality, more especially if pointed like the glovers'-needle. It may be had of any degree of fineness, and is of sufficient length, after being deprived of its point and eye, to present a smooth, polished surface to the flesh in which it is to lie. During the operation, too, it is particularly manageable, as when once introduced there is, on account of its length, little danger of its slipping out again, even though left untied while the other steps of the operation are in progress ; and that the presence of such needles is not a source of much irritation to the flesh, is shown by the length of time during which they lay comparatively harmlessly in the lip, viz., seventy-two hours in the child of two and a half years, and sixty hours in that of three months ; a duration which,

by the way, may be, perhaps, as a general rule, unnecessarily long; but which was permitted in the above cases for security sake, encouraged by the absence of all symptoms of inordinate irritation from their presence.

I shall conclude by observing, that after all such operations, in which great nicety and perfection is aimed at, the strictest precautions should be taken to guard against every source of inordinate feverish excitement; as, under fever, the lymph thrown out is not organized, and failure must necessarily be the consequence. I have little doubt, but that had the bronchitis and fever which came on, the day of the removal of the needles in Byrne's case, showed itself a day earlier, the operation would have been unsuccessful; and it is under the influence of such conviction that I am always desirous, especially in hospital practice, and where the patient is fresh from the country, of operating soon after admission, in order to have the union accomplished before there be time for any derangement of health from change of air, or other sources of insalubrity.

Explanation of the Plates.

PLATE I.

Fig. 1.—Representation of the double Hare-lip in Mary Fox, before operation.

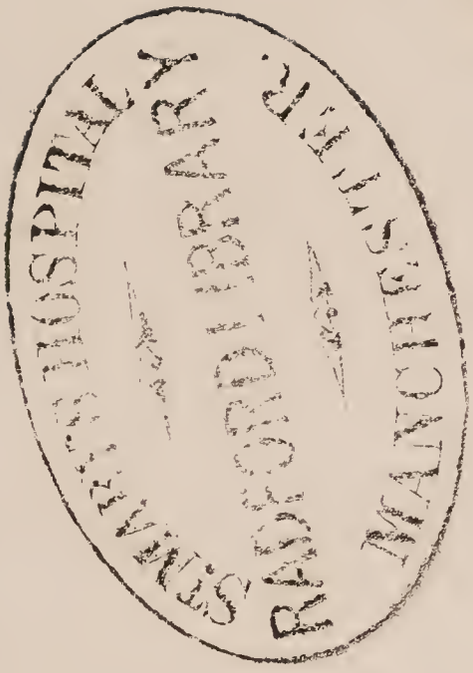
Fig. 2.—Representation of the same, on the tenth day after the operation.

Fig. 3.—Form of Needle used in the operation.

PLATE II.

Fig. 1.—Representation of the single Hare-lip in Maria Byrne, before operation.

Fig. 2.—Representation of the same, on the twelfth day after the operation.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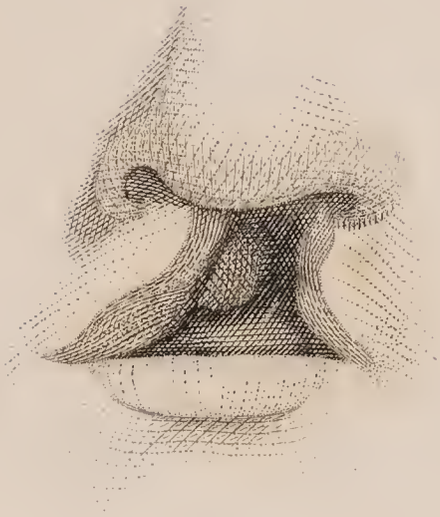

Fig. 1.

Fig. 2.

ART. VIII.—*On the Diagnosis and Treatment of certain Affections of the Heart.* By ROBERT J. GRAVES, M. D., &c. &c.

No disease requires more attention than pericarditis, whether we consider the importance of the organ engaged, the frequency of its occurrence, or its often insidious and latent progress. In studying this affection we can derive little or no assistance from ancient or even modern authors, except of the most recent date, for inflammatory affections of the heart and its investing membranes were either completely overlooked or grievously misunderstood, until long after the investigations of Laennec had disclosed the advantages of physical signs. It was then discovered that, contrary to the received opinion, pericarditis and endocarditis must be ranked amongst common affections, and that they are accompanied, during their origin and progress, by physical signs highly characteristic, and of such importance, that they enable the practitioner not merely to distinguish the first stages of the attack, but to anticipate its origin and extinguish it at its very commencement. The truth of this assertion is proved by every day's experience; and we have now the satisfaction of knowing that inflammation of the heart and its membranes is not necessarily either fatal or intractable. Still, however, we must not suppose that recent investigations have satisfactorily established the value or the meaning of all the physical signs that can be detected from the commencement to the termination of inflammatory affections of the heart, for the nature and position of the organ engaged, whose motions can be seen, felt, and heard, occasion changes in the physical signs, which alter and vary from stage to stage, from day to day, nay, sometimes from hour to hour. The study of variations so numerous and yet so important, will require the co-operation and well-weighed testimony of many observers; with a view of promoting the cultivation of this fertile field, the following remarks have been collected, and will, I trust, con-

tribute to enlarge and render more accurate our views, in certain points connected with this department of pathology:

Case I.—*Sounds produced by Pericarditic Friction, closely resembling those derived from Valvular Disease; method of Diagnosis.*

A man named Mulcahy, æt. 23, was admitted December 1st, 1841. He stated that he had led a very intemperate life, his usual allowance being from six to eight glasses of whiskey daily. He earned a livelihood by playing on a wind instrument, and after a few hours' performance, used to suffer from distressing palpitations and pain about the heart. At times he was affected with a sense of fainting, which usually terminated in vomiting. He followed his avocation till about two months before admission, when he was attacked with rheumatism, and shortly after with great dyspnœa, anasarca, &c. &c. On admission, his surface was cold, lips and hands livid, feet swollen, and belly distended. He suffered from dyspnœa; cough, with bloody expectoration; his eyes were staring and protruded; face tumid; jugulars turgid, but not pulsating; pulse 70, regular, but small and weak; respiration 28; urine scanty and highly albuminous; extreme debility. The left lobe of the liver occupied the epigastric region, in which situation alone pressure caused pain. He had slight pain in the right shoulder. There was no dulness except over the lower and back part of both lungs, where the respiration was weak and accompanied by a moist crepitus; the cardiac region sounded duller than natural. The motions of the heart were evident, strong, diffused, and were accompanied, not by the two natural sounds, whose duration and tone are so different from each other, but by two loud, prolonged sounds, of equal duration but of different tones; the first was a *bruit de scie*, the second was a musical sound, closely resembling the noise made by rubbing the moistened finger on glass. These phenomena were only heard at the base, and were quite inaudible at the apex of the heart; but they extended from the base along

the aorta, and were very distinct under both clavicles, particularly the left; they were not heard either in the carotids or in the cervical portions of the subclavians. In no situation was there the least frémissement; no thrill in any of the arteries of the neck or upper extremities; no abnormal sound over the abdominal aorta. The next day, his condition was much the same, except that instead of the musical sound we had a well-marked and loud *leather creak,* very much prolonged and masking the normal second sound, and a strong frémissement was felt over the base of the heart; there was no increase of dulness. The pulse continued regular, 72; the respiration only 20; but he was evidently sinking, and on the following morning he died.

Post Mortem.—General anasarca; both pleural cavities were occupied by a large quantity of fluid, upon which the lungs floated; on the left side the heart was bedded in the lung, and both were carried into close apposition with the anterior parietes of the chest, so as to bring the heart into extensive contact with the sternum and costal cartilages. There was no fluid in the pericardium, but its surfaces were coated with lymph, shreds of which extended from one surface to the other at the base of the heart. In this situation, the lymph appeared to have been very recently effused; it was easily removed, and presented an irregular honeycomb appearance. At the apex of the heart, the opposed membranes were firmly united. The heart itself was hypertrophied and both its ventricles dilated. All the valves, the endocardium, the aorta and pulmonary artery were quite free from the least trace of disease.

There were many particulars connected with this case that might have led a practitioner to consider it as one of valvular disease. From the man's own account it appeared, that he had for a long time suffered from palpitations, faintings, dyspnœa, anasarca, &c.; and his mode of life and occupation frequently produce that affection; but the physical signs were more likely to mislead than either the history of the case or the general symptoms. He had an enlarged heart, detected by increased

dulness, two prolonged sounds masking the natural sounds of the organ, not audible at the apex, but exceedingly distinct over the origin and course of the aorta, one of these sounds having a perfectly musical tone, a character which hitherto has not been noticed in pericarditis. At our first visit, these circumstances, taken in connexion with the absence of frémissement over the heart, or of pain or uneasiness about that region, together with the state of the pulse, might have easily led to a wrong diagnosis. But, on the other hand, the phenomena differed in many points from those *supposed* to be indicative of disease of the aortic valves. The sounds, though heard to a great distance, did not follow exclusively the course of the aorta or its trunks; they were not heard either in the carotids or subclavians in the neck, nor was there any thrill or visible pulsation in these vessels; and in addition, the sounds appeared, when examined by the stethoscope, to be derived from a superficial source, and were almost equally intense over a large space. These were the circumstances that induced me to look upon the case as pericarditis.

The next day the matter was put beyond doubt, for the musical sound had disappeared, and was replaced by a leather-creak, attended by a strong frémissement over the base of the heart. During all this time the pulse remained at 72, was perfectly regular, though weak, but the action of the heart was much stronger than natural, a circumstance frequently observed in this disease.

The manner in which the heart was pushed against the bony parietes of the chest, satisfactorily explains the fact of the sounds being heard to so great a distance, the organ itself at the time acting with more than usual vigour. But what were the conditions that gave rise to the musical sound? Let us reflect for a moment upon the actual state of the heart and pericardium in this case. If we examine the parts when removed from the subject, seeing the heart collapsed, and the pericardium loosely surrounding it, we cannot then understand how such sounds

could be produced, by the motion of the one within the other. But such is not the condition of these parts in the living body: the pericardium is there firmly fixed at its apex and base, it is tense and stretched like the parchment of a drum; and if in this bag we have an enlarged heart moving slowly backwards and forwards, the heart itself being turgid with blood, and rigid from the contraction of its muscles, we have the conditions that most probably gave rise to the sounds described, the true intensity and loudness of which would, of course, be altered and vary according to the varying condition of the two surfaces rubbed together; and it is well known, that membranes, similar in structure to that covering the heart, and lining the pericardium, have their surfaces altered by inflammation remarkably and rapidly, being at one time smooth and dry, and then becoming quickly smooth and moist, and afterwards covered either with puriform matter, or denser lymph, which latter may coagulate, forming on the rubbing surfaces either a punctiform roughness, or ridge-like pseudo-membranous projections; and it is evident that each of the conditions now enumerated must alter the tone of the sounds produced by the friction of the opposing surfaces, or affect their loudness and duration. Pericarditic sounds may, therefore, be as loud, *and as prolonged as valvular sounds*—a fact hitherto scarcely sufficiently dwelt upon by pathologists—pericarditic sounds, like valvular, may likewise be accompanied by frémissement; and, consequently, in endeavouring to make the diagnosis between the two sets of sounds, we must seek for means of distinguishing them, not in their loudness, their tone, or their duration—not in the presence or absence of frémissement, but in the fact, that pericarditic sounds appear to the attentive ear to issue from a more superficial source, are much more extensively diffused, and are almost equally audible in regions of the chest very distant from each other, as, for instance, under both clavicles. Pericarditic sounds, too, undergo much quicker alteration in character than valvular, which, when once formed, are almost always permanent; and to conclude,

pericarditic sounds seem to be conducted by the solid parietes of the chest, while valvular sounds are chiefly propagated by the contents and parietes of the great vessels. The following case, published by Dr. Watson, in the Medical Gazette for 1835, illustrates, in a strong manner, the peculiarities of pericarditic sounds which I have just alluded to. He says, that in his case the murmur "represented very exactly the upward and downward action of a saw on rough wood, was by far the loudest sound of the kind that he ever heard. It was distinctly over the *whole of the chest*, both before and behind, only somewhat fainter as the distance from the heart became greater: with your ear upon either scapula, you might have supposed that you were listening to the deep buzzing vibrations of the larger string of a bass viol." At the *post mortem* examination it was found, that the pericardium was every where, except at its posterior part, covered with a "thin coat of *firm* gray lymph, quite rough with minute papillæ, projecting from almost every point of its surface, of an almost *horny consistence*, harsh and resisting to the touch."

The following case is, in many particulars, extremely worthy of notice, and is unique, so far as my experience goes, in this, that the rheumatic inflammation seized the pericardium *before* the joints. This fact proves, that physicians have been hitherto too prone to attribute pericarditis, carditis, or endocarditis, to metastasis, a doctrine applicable to some cases, but by no means to all, for, as in the present instance, the first symptom of a rheumatic inflammation may occur in the pericardium before any of the joints are affected; and in the case of Reddy, to be next related, the pericarditis began at the very time that articular inflammation had reached its maximum intensity. But if the heart and its investments may be thus attacked at the very beginning, or during the acme of rheumatic fever, it is easy to believe, likewise, that inflammations of the heart and membranes may commence for the first time towards the termination of rheumatic fever, when the articular inflammation has almost

disappeared, and under such circumstances, a superficial view of the phenomena discovers the easiest explanation in metastasis; neither is it unimportant to observe, that the fever usually accompanied by inflammation of the joints, and termed rheumatic fever, is a fever *sui generis*, and as readily distinguishable from the fever caused by inflammations, as is the fever of typhus, small-pox, or measles. In truth, in rheumatic fever, the quickness of the pulse, heat of the skin, tendency to profuse sweating, debility, restlessness, and thirst, may all exist, without any inflammation of the joints, and may be solved without such inflammation ever occurring, as I have witnessed in several well-marked cases of individuals liable to rheumatic fever, and who had previously suffered from attacks of fever with arthritis in the usual form, and subsequently, on exposure to cold, were seized with symptoms of pyrexia, which, in intensity, duration, and every other particular, were identical with their former fevers, save and except, that from beginning to end not a single joint was inflamed. But it may be asked, am I correct in calling such a fever *rheumatic?* My answer is, that in the instances referred to, the urine was exactly the same as in former attacks, and the sweats, whose abundance by no means alleviated the fever, had a peculiar odour which never occurs except in rheumatic fever; another characteristic mark was likewise observable, viz., that though the fever was intense, and thirst considerable, and tongue furred, yet the appetite was not necessarily impaired, at least at the commencement of the fever. These considerations are of practical interest, and prove that in the treatment of acute rheumatism we cannot hope to cure the fever directly by means which merely tend to get rid of the articular inflammation. *As arthritis may exist without rheumatic fever, so rheumatic fever may exist without arthritis; when combined they each aggravate the other, but the cure or disappearance of one does not necessarily determine the removal of the other.*

Case II.—A woman, æt. 19, named Fitzgerald, was admitted September 1st, 1841, into the hospital, labouring under

febrile symptoms of a trifling character. She complained principally of headach, with loss of sleep. Her pulse was quick and her tongue foul. For these symptoms she was treated, and every thing seemed going on favourably, till September 5th, when the following observation was made:

Face pallid and anxious; breathing hurried, 40; alæ nasi dilated at each inspiration; pulse has fallen from 90 to 50, very *weak, irregular and intermittent;* no cough or pain in the chest; no palpitation; physical examination did not detect disease any where except over the cardiac region, in which there was a distinct rubbing sound, accompanying both sounds of the heart. It was most intense at the apex of the organ, and appeared to accompany the first sound more particularly. It was attended with a very perceptible frémissement; in no situation had it the character of a "*soufflet.*" The impulse of the heart was exceedingly strong, and its sounds very loud. She was cupped over the heart and put on the use of calomel and opium, five grains of the former with one of the latter, every fourth hour.

September 6th. Countenance much improved; pulse 72, full and soft, but still irregular and intermittent; respiration 28; alæ nasi not dilated; no pain in any part. The *friction* sound is still very evident, though less intense, particularly at apex of heart; no dulness, impulse stronger than on yesterday, sounds of heart very distinct. Blister over the heart, and continue the pills of calomel and opium.

September 7th. Mouth sore; pulse 76, small, soft, regular, *without any intermission;* respiration 28, countenance good; the impulse and sounds of heart are both good; the friction is barely audible, being most intense over the right side of heart. Cont. pills.

September 8th. No trace of frottement; the sounds and impulse of heart natural; pulse 80, regular and soft.

10th. Was last night attacked with pains in the loins, knees,

shoulders, wrists, and ankles. These joints are now exceedingly painful, red and swollen. Pulse 80, small and soft.

It is unnecessary to go through the details of the case. Suffice it to say, it ran the usual course of severe articular rheumatism, and lasted for about ten or twelve days. The heart was daily examined, and exhibited no sign of disease throughout. The treatment consisted of opium in large doses, *one grain every third hour;* it succeeded admirably, and seemed to expend itself solely on the disease, for during the whole time she was taking it, it never produced contraction of the pupil, headach, hot skin, furred tongue or constipation.

M. Chomel has long since shown, that when the pulse becomes suddenly feeble, faltering, intermittent, or unequal, without any apparent and adequate cause, this sign, especially if attended with the usual concomitant symptoms of an obstructed circulation, affords the strongest evidence of pericarditis; and Dr. Hope asserts, that on this sign alone he has seen M. Chomel found a successful diagnosis in the last stage of a typhous fever, where the symptoms were extremely complex. Chomel's observation is, I think, correct, and leads me to discuss the motions of the heart in pericarditis and carditis more at large. *In some cases of pericarditis the heart's action becomes increased in strength for many hours before any physical sign of pericarditis can be detected,* and before any pain is felt in the region of the heart. In such cases, when the usually acknowledged symptoms of pericarditis are added to this already existing augmented action of the heart, the latter goes on increasing, and finally becomes excessively violent, and does not begin to decrease notably for several days after the peculiar symptoms of pericarditis have disappeared. This course may be, perhaps, explained by supposing that the muscular substance of the heart became inflamed before the pericarditis came on, and continued to be so after the pericarditis had subsided, for it is a general principle, that superadded inflammations generally yield to remedies, before the fundamental and primary disease exhibits a manifest improvement.

In rheumatism, the action of the heart should be carefully watched, and when it becomes increased without any apparent cause, that occurrence alone is sufficient to warn us of the approaching danger.

This point has not, I believe, hitherto attracted the attention it deserves, and its importance is enhanced by the fact, that an increase in the heart's action may not only precede the physical, but the constitutional symptoms of inflammation of that organ or its membranes, and consequently may be the only beacon to forewarn us of a danger still beyond the visible horizon, and undiscoverable by any other means. Connected with the motions of the heart is the remarkable disparity that exists between the energy of the heart's action and the strength of the pulse, for it often happens, that the pulsations in the cardiac region are violent while the pulse is weak and thready at the wrist. This disparity consequently prevents us from deciding on the propriety of antiphlogistic measures by examining the pulse, a circumstance which shews as how erroneous *a priori* conclusions are in medicine, for surely it is in inflammation of the heart and its membrane that we should have expected the pulse to be our most certain guide. In pericarditis, it was formerly supposed that the pulse was invariably accelerated, except towards the close of the disease when the vital powers of the heart became exhausted, or its motions impeded by effused fluid. But this is so far from being correct, that in several of my cases it will be found that the pulse was not quicker than natural from the beginning to the end of the disease, and in the boy Reilly, whose post mortem examination will be just now detailed, several German physicians of eminence who honoured my clinic with their presence, could not be persuaded, by the evidence of the most indubitable physical signs, of the existence of pericarditis, because they said, in no such case could the pulse be natural in its frequency, softness, and rythm, and they were only convinced when the pericardium was opened. A perfectly natural pulse is not an unfrequent occurrence in pericarditis, but the case before us exhibits

a very remarkable peculiarity, viz., *a sudden decrease in the frequency of the pulse at the very origin of the disease.* Of this I have witnessed but one other example where, in the commencement of pericarditis, the pulse fell to 36, and was extremely weak, faltering, irregular, and occasionally intermittent.

The gentleman whose pulse thus fell in a way similar to that of Fitzpatrick, likewise recovered. The causes that produce quickness of the pulse in one case and its slowness in another, in every other respect apparently similar, will for ever remain undiscovered; and the same observation probably applies to the causes upon which depend irregularity of the heart's action. It is well known, that certain forms of dyspepsia, hysteria, and nervous diseases, occasion palpitations of the heart, and every variety of irregularity and intermission in the pulse, and that without any inflammatory or organic complication. When, therefore, inflammation attacks the heart or its membranes, palpitation with irregularity, weakness, and intermission of the pulse, may be its indirect effects acting on the nervous energy of the heart. This explanation seems the most satisfactory that can be advanced; but still we cannot help thinking, that the rythm of motions of heart are sometimes directly interfered with by the inflammation, nor is it difficult to conceive, that where perhaps one auricle and ventricle are inflamed, while the other auricle and ventricle are free from disease, the simultaneous action of these parts may be deranged. Be this as it may, and whichever hypothesis we adopt, it is of paramount practical importance to recollect, *that a weak, irregular, and intermitting pulse may exist in the very commencement of pericarditis,* that it may not exceed the natural frequency, or as in the two cases detailed may fall much below that standard, and yet antiphlogistic treatment be required. The result of my experience is, that in carditis and pericarditis, when the pulse is weak, irregular, and intermitting, when it is soft, natural in its frequency, or else morbidly slow, that general venesection should never be employed; leeches over the region of the heart, cupping, blisters,

calomel with opium are best suited to this emergency, if it occurs during the acme of the disease, but when towards the close, our chief reliance must be placed on powerfully blistering the region of the heart, dressing the vesicated surface with mercurial ointment, and exhibiting internally small doses of calomel with large doses of opium, and, if necessary, wine. Digitalis exerts little or no control over inflammation of the heart; and, like colchicum, if given in doses at all proportioned to the danger, it often suddenly produces dangerous or even fatal prostration of the nervous system. In protracted forms of cardiac or pericarditic inflammation I have found colchicum combined with mercury and opium a useful adjunct; and where the disease is decidedly chronic, refusing to yield to treatment, much benefit is sometimes derived from hydriodate of potash. Should a case, where either the internal or external surfaces of the heart are engaged, resist all these remedies, the analogy of rheumatic iritis leads Surgeon M'Donnell, my clinical clerk, to propose the internal administration of spirits of turpentine, a proposal that meets my approbation. A similar analogy would, under certain circumstances, point out large doses of guaicum, or its preparations, as likely to afford relief in very obstinate and intractable pericarditis. Part of Reddy's case was published in the January Number of this Journal, and I now bring forward the remaining portion of its history to prove that pericarditis may arise when the articular inflammation is at its height.

CASE III.—*Pericarditis arising at the Moment that the Inflammation of the Joints was most intense.*

On the day of admission his pulse was only 72, and the action and sounds of the heart natural. The next day, June 18th, eight o'clock A. M., the pulse had risen to 96, was full, strong, and regular; the heart's impulse was greatly increased, and with the first sound was heard a distinct "*bruit de soufflet.*" There was no increase of cardiac dulness; no pain or uneasiness on pressure over this region or in the epigastrium; no palpitations; in short, so far as the patient's sensations were concerned,

the cardiac affection was completely latent. He was again examined at twelve o'clock the same day, and we now heard, in place of the bruit de soufflet, a well marked frottement accompanying *both* sounds, extending all over the cardiac region, and attended with a very evident frémissement. The cardiac region was not duller than usual. The pulse had risen to 108; it was strong and hard, but not irregular. He was cupped over the heart, and calomel and opium largely exhibited; five grains of cal. and one of opium four times a day. The next day the *friction* sound had disappeared, but the soufflet had returned, and again accompanied the first sound. Two days after there was no soufflet whatever.

The pericarditis in this case did not follow the subsidence of the inflammation in any other part, but occurred at the very acme of the articular disease. The day on which the sound of friction was first heard, was that on which he suffered most acutely from the articular affection.

CASE IV.—*Pericarditis.—Pulse regular.—Peculiar Eruption over the Body, &c.*

A boy, named Reilly, æt. 14, was admitted September 15th, 1841. He stated, that a fortnight before admission he was attacked with shivering, headach, pains in the loins extending along the margin of the ribs, and with severe pain in the pericardial region and violent palpitations. Two days after, an eruption appeared. When admitted, he presented the appearance of an advanced stage of typhus. He was quite collapsed, feet cold, and hands blue. The surface of the body was covered with an eruption of a small size and elevated, giving to the hand the sensation of being covered with particles of sand. It was of a *miliary* form, and filled with a sanguinolent fluid. It seemed to have appeared in successive crops, for in some parts it was quite fresh, and the little vesicles were full and prominent; in others they were broken and levelled. Pulse 72, scarcely perceptible. He got wine and hot jelly, and warm stupes to his legs.

September 16th. I saw him for the first time. His pulse was then 72, *weak, but regular;* his respiration 40, and laboured; lips livid; great anxiety of countenance. He complained of extreme pain in the cardiac region, increased by pressing the ribs towards the heart, or by making deep pressure in the epigastrium, so as to push upwards against the diaphragm. The stethoscope detected a remarkably loud frottement all over the præcordial region, accompanied with a strong frémissement. The frottement was heard with both sounds; and in some situations, particularly towards the right nipple, it had the character of the bruit de cuir neuf; there was no bruit de soufflet; impulse violent, and sounds of heart loud; no dulness; *the morbid sounds did not extend beyond the cardiac region.*

There was scarcely any change till two days after, when, in addition to the pericarditis, he was attacked with acute pain in the right hypochondrium, with excessive tenderness on pressure. The next day the legs and belly began to swell, and new phenomena were observed in the neighbourhood of the heart. The friction sounds, which two days before were very loud, corresponding to the apex of the heart, were now perfectly absent, and though the cardiac region sounded clear, yet immediately above the nipple, and for two inches and a half upwards, *there was complete dulness,* and all over this dull region we heard the *friction* as loud as ever, and that modification of it called *the leather creak,* which was still confined to the right side of the heart. It was found, that these sounds were quite independent of the respiratory movements, for they went on uninterruptedly during the cessation of breathing. Early next morning he died, and the post mortem examination was exceedingly illustrative. The lungs and pleura were quite healthy. The heart occupied a situation higher in the thorax than usual; *its base corresponded to the space between the first and second ribs,* and was evidently pushed up by the left lobe of the liver, and the fluid so suddenly effused in the abdomen. On slitting up the

pericardium it was found thickened; the external layer was very vascular, and both it and the layer covering the heart were thickly coated with lymph. At the apex of the heart the two surfaces were closely united, but at the base there was no attempt at union. In this situation, but more particularly towards its sternal aspect, the lymph was thrown out in greater abundance, and presented a rough and nobbed appearance. The substance of the heart as well as the valves and endocardium were free from disease. The peritoneum was quite healthy, but its sac was distended with a large quantity of straw-coloured serum, without any lymph. The liver was greatly enlarged and engorged with blood, which exuded freely from any incision made into it. The intestines and stomach were quite normal. The kidneys exhibited the second stage of the albuminous nephritis (so called), and the urine in the bladder was albuminous.

It is right here to draw the reader's attention strongly to the fact, that although the impulse of the heart was violent, yet the sound produced by the roughened pericardiac surfaces against each other was very limited in extent, being only audible over the region immediately covering the heart; whereas in Mulcahy's case, and that detailed by Dr. Watson, the pericardiac friction gave rise to a sound audible over even the most distant parts, and in them nearly as loud as in the cardiac region. What can be the cause of a difference so striking? It cannot be accounted for by any corresponding difference in the nature of the lymph effused, and a consequent difference in the physical constitution of the rubbing surfaces, for no such difference could be perceived between the pericardiac pseudo-membranes in the case of Mulcahy and that of Reilly. In Dr. Watson's patient they are represented to have been somewhat of a horny nature, a fact which may be thought to explain the loudness and extensive diffusion of the sound; but as such an explanation does not account for the great difference observed as to the extent and diffusion of the pericardiac sounds in the two other patients, it becomes

a matter of great interest to ascertain its real cause, and, after much consideration of the subject, and duly weighing all the phenomena exhibited during life and revealed by dissection, I have little or no hesitation in affirming, that, in Mulcahy, the sounds were louder and more extensively audible; because, first, his heart was greatly hypertrophied and enlarged, and, consequently, the rubbing surfaces were actually greater in extent; secondly, because, as happens in all cases of considerable enlargement of the heart, the position of that organ within the chest is altered, and a much greater proportion of its body comes in contact with the chest; and thirdly, (but upon this I shall not insist so much as upon the two preceding) because in Mulcahy the water effused into the pleural cavity pressed the heart still more closely against the sternum and ribs, which thus acted as conductors of the sound.

These cases are then peculiarly instructive, *as indicating a great difference between the diffusion of the rubbing sounds heard in pericarditis attacking a heart previously healthy and of natural dimensions, and pericarditis supervening where the heart is enlarged and hypertrophied.*

Having spoken of rheumatic inflammation as affecting the substance of the heart itself, it is necessary to observe, that the existence of rheumatic inflammation of the heart is rather inferred than proved. A little reflection will, at all events, convince us, that rheumatism, properly so called, affects certain systems of muscles much more frequently than others. The locomotive muscles are those most usually the seat of rheumatism; and even among them, an inexplicable difference may be detected upon close examination. Those employed in the motions of the head and neck, and those which perform the flexion of the lumbar spine, being by far more frequently affected than any others; on the other hand, all that class of muscles which is connected with organic life, is comparatively exempt from muscular rheumatism; thus the extensive system of the intestinal muscles are seldom, if ever, so affected. The vesical

muscles are similarly circumstanced, and it may be doubted whether the muscles of the heart do not enjoy the same immunity. The muscles of the heart, it is true, are often excited into inordinate action by rheumatic inflammation of their lining or covering membranes; but this very increase of action would be either impossible, or attended with excessive pain, if the muscular structure was attacked by rheumatism at all resembling that which we observe in lumbago or crick in the neck. Such an affection would render the heart's motions, particularly when increased, extremely painful; indeed it would most probably arrest them altogether.

UPON "BRUIT DE SOUFFLET" AND "FREMISSEMENT," AS MEANS OF DIAGNOSIS IN DISEASES OF THE HEART.

Recent authors have contributed much to cardiac pathology, and, if we credit all they assert in their books and essays, have left but a scanty harvest to be reaped by their successors. My own experience, however, has been very unsatisfactory, inasmuch as it has not unfrequently appeared at variance with the rules laid down by authors, and I have, consequently, been led to believe, that the means of distinguishing diseases of the heart from each other, have not been yet brought to the alleged degree of perfection, and indeed many reasons induce me to conclude that such perfection is unattainable, for we can localize disease of the heart only by the following means: first by the sort of derangement each induces in the circulation and its associated functions; secondly, by the change such disease produces in the motions of the heart as felt by the patient, or as perceived by the eye or hand of the observer; and thirdly, by the morbid sounds developed during the heart's action.

The numerous observations and dissections I have made, have convinced me, that the functional derangements produced by disease of any particular part of the heart, are seldom sufficiently characteristic to enable us to make out whether the disease be situated in the auriculo-ventricular or semilunar

valves, nay, it has frequently occurred to me, that all the symptoms supposed to be indicative of disease of the right side of the heart, have been occasioned by diseases of the left side, and *vice versa*. So far, indeed, from symptoms being always precise enough to point out the seat of the disease, they are often insufficient to indicate its very existence, an assertion proved by numerous specimens exhibited at the Pathological Society.

The chief means of distinguishing which of the valves of the heart is diseased, is derived from the supposed direction of the sound. This is by far the most useful diagnostic mark we possess, and by it we may often, but not always distinguish disease of the right from disease of the left side of the heart, and we may, even occasionally, though not often distinguish diseases of the auriculo-ventricular from those of the semilunar valves. Another means of diagnosis much relied on, is taken from the morbid sound accompanying, and therefore being a perversion of the first or of the second sound of the heart, but is at each motion of the heart, valves are opened and valves are closed, a morbid sound may be produced by any change of structure which permanently prevents the complete opening or shutting of the valves, and consequently the same sound may arise, either from changes of structure obstructing the advancing blood, or from changes permitting regurgitation; in other words, it is impossible to judge at the moment a sound occurs, which of these is its cause.

As to the motions of the heart, their derangement scarcely ever indicates the seat of disease with any precision.

CASE V.—*Bruit de Soufflet all over the Cardiac Region, but particularly loud to the Left of the Nipple, and not extending along the Aorta; Post Mortem—no Valvular Disease; extensive Disease of the ascending Aorta.*

A man named Connell, æt. 50, was admitted August 10th, 1841. He stated, that for eight years before admission, he had

suffered from palpitations and dyspnœa, which had increased greatly in severity of late; he had always led an intemperate life, and for many years was in the habit of drinking from ten to twenty glasses of whiskey in the day. When admitted he was much emaciated, his belly was distended and his legs œdematous. He had cough with purulent expectoration, no dyspnœa when at rest, and his pulse was 74, soft and regular; decubitus on the right side; no pain in any part of the chest or abdomen; no enlargement of jugulars, but the tops of the ears and lips are blue; no visible pulsation, thrill, or bruit de soufflet in any of the arteries of the neck or upper extremity, and when at rest, no suffering from palpitation. *Physical signs.*—Chest sounded dull all over right side, both before and behind; in the upper part, the respiatory murmur was weak and mixed with crepitus, below it was scarcely audible. The left side sounded clear, and the respiration was loud, puerile, and free from rale; there was slight increase of cardiac dulness, particularly towards the sternum; the impulse of the heart was strong and rather diffused, its sounds loud; the first was accompanied by a bruit de soufflet, audible all over the cardiac region, but remarkably intense to the left of the nipple. *This did not ascend along the course of the aorta,* nor was it accompanied by any frémissement.

From his admission into hospital till his death, which took place five weeks after, there was not the least change in the cardiac signs. The physical phenomena did not undergo the slightest alteration; the pulse was always natural in frequency and free from any intermission or irregularity, and unless disturbed, his breathing appeared easy and tranquil. The anasarca increased, and the cough became more distressing; the crepitus heard on admission gradually passed into gurgling, and on the 20th of September he died.

Post Mortem.—The abdomen was greatly distended with fluid; the intestines were healthy; the liver was somewhat enlarged, and its edges rounded off, but otherwise natural; the gall bladder contained a few calculi; the *lungs* were connected

to the parietes by old adhesions; the left was exceedingly healthy; the right was studded with tubercle, and its apex was occupied by small cavities; the *heart* was hypertrophied, and the pericardium universally adherent, the union being effected by a dense cellular membrane. There was not the least trace of vascularity or of recently deposited lymph, but the pericardium was much thickened. *All the valves of the heart, the semilunar, tricuspid, and mitral were perfectly healthy; the aorta was dilated at its ascending portion (not at its arch), its lining membrane completely removed, and its inner surface rough and scabrous from an abundant deposition of earthy matter in its middle coat.* The arch of the aorta and its descending portion were extremely healthy; and the normal condition of the aortic valves was put beyond question, by pouring water down the aorta, not a drop of which escaped into the ventricle.

In this case, the permanency of the bruit de soufflet during many weeks, and its being constantly confined to the same place, left no doubt of its being owing to an organic fixed cause. This bruit, though heard over the right side of the heart, was more audible over the left, and, therefore, we looked for that cause in the left cavities, and we assumed that the mitral valves were the seat of disease, or altered in their structure. This diagnosis, however, I considered more tentative than certain, and explained to the class, that I had not much confidence in it, for, though the bruit was loudest immediately over the situation of the mitral valve, yet, in the majority of cases, regurgitation, through the left auriculo-ventricular opening, is accompanied by a marked derangement of the pulse. Against its depending on disease of the aortic valves or of the inner surface of the aorta itself, I urged the fact, that the bruit could not be heard along the course of the aorta, as recent writers say it invariably is in either of these cases. The absence of visible arterial pulsation and thrill was opposed to the supposition of permanent patency of the aortic valves. Dissection proved that

the bruit was occasioned by a roughness of the internal aortic surface, embracing the whole of its ascending portion. Here, then, is a fact totally at variance with received notions, and, in my opinion, quite subversive of the rules laid down by those pathologists who think they can always discover the causes of cardiac bruits by a close examination of the intensity and diffusion of the sound. I leave it to others to explain the fact, as certain as it is anomalous, that a loud bruit de soufflet, caused by extensive aortic roughness, had its maximum intensity over the region of the mitral valves, and could not be traced along the ascending aorta. How are we to distinguish such a case as this from disease of the mitral valves? The following, from Dr. Budd, in his Clinical Remarks, at King's College Hospital, published in the Medical Gazette for January the 7th, 1842, exhibits symptoms, functional and physical, almost so perfectly identical with those detailed in the instance of Connell, that a candid observer, reading the history of both, must conclude that they necessarily depend upon exactly the same structural alterations. "A girl, named Maria Pepler, was admitted into King's College Hospital on the 18th November, 1840. She was 25 years of age, and had been living in service. She stated that her health was very good until five years previously, when she became affected with dropsy of the legs, which went off at the end of six weeks. Since that time she had been subject to palpitation and shortness of breath, with occasional cough; and the dropsy had recurred whenever she had taken cold. On admission, she complained of palpitation, much increased by any exertion, and of occasional faintness. There was difficulty of breathing to such a degree, that she was unable to lie back; and a troublesome cough, attended with expectoration of a frothy mucilaginous fluid, and sometimes so prolonged as to bring on vomiting. The lips and cheeks were of a purplish hue, and there was great distention of the jugulars. Much dropsical swelling of the lower extremities, but no œdema of the hands and face. A systolic bruit was heard over the

præcordia, loudest at the point of the heart, *and to the left of the mamma.* At the point of the heart no diastolic sound could be heard. Towards the sternum and base of the heart, the systolic bruit diminished very much in intensity, and the natural diastolic sound became inaudible. There was no morbid sound in the course of the aorta or carotids. Auscultation of the lungs indicated increased secretion from the bronchial tubes. On the 14th of December she died suddenly.

"*Post Mortem.*—The heart was of enormous size, placed transversely and quite uncovered by lung. The right ventricle is enormously dilated, and its parietes are thicker and firmer than those of the left ventricle. The apex of the heart is formed by the right ventricle, and descended lower than the left. The left ventricle is not dilated or hypertrophied. Both auricles are greatly dilated, and were gorged with blood. The mitral valves are joined together, and perfectly rigid, forming a permanent aperture which scarcely admits the tip of the little finger. A good deal of bony matter is deposited under the investing membrane of the valves; but there are no vegetations on their surface. One or two extremely minute warty growths on the tricuspid valves. The aortic valves are, perhaps, a little thickened; but, in other respects, they are perfectly natural, as are also pulmonary valves and the aorta."

Notwithstanding the boasted perfection of the means pointed out by recent writers, and which they aver, always indicate with certainty the nature and locality of valvular diseases of the heart, it must be allowed that these means were totally inapplicable, as leading to a diagnosis between the cases of Connell and Pepler. We are led, therefore, to the humiliating confession, that excessive disease of the mitral valves cannot be always distinguished from aortic roughness in the present state of science.

In Connell's case we did not even suspect the existence of aortic roughness, because some of the physical symptoms believed to be most strongly indicative of that roughness were wanting, viz., vibration felt along the right edge of the sternum,

and loudness and roughness of the systolic bruit heard there and over the arteries of the neck. The absence of these two so vaunted diagnostic symptoms, in a case where there were ossific plates on the inner surface of the ascending aorta, is scarcely more destructive of the presumptions of modern cardiac signs, than is the presence of the very same two symptoms in the following case, also related by Dr. Budd (Medical Gazette, December 24, 1841), and in which they originated from diseased aortic valves. After detailing the sufferings and post mortem of the patient, whose name was Coyne, Dr. Budd sums up his remarks by saying, " When Coyne was admitted into the hospital, it was evident, from the great extent of the dulness at the præcordia, that the heart was much enlarged, and from the powerful and heaving impulse, that there was hypertrophy of the left ventricle. We inferred also, from the visible pulsation of the arteries, and from the diastolic bellows-sound, heard about the base of the heart, that the aortic valves were diseased, and admitted regurgitation. The loud systolic bruit heard at the apex, might also arise from such disease of the aortic valves. The strong vibration felt by the hand showed that there was some ossification.

" So far our predictions were realized. But we were led to imagine, from the strong vibration felt along the right edge of the sternum, from the third rib of the clavicle, and from the loudness and roughness of the systolic bruit heard there and over the arteries of the neck, that there were ossific plates on the inner surface of the ascending aorta. In this, however, we were mistaken ; this portion of the artery was quite healthy.

" This case of Coyne shows us how perfectly a vibration, originating at the aortic valves, and causing a systolic bruit, may be propagated along the arteries."

In the same lecture Dr. Budd ascribes to the late Dr. Hope, the discovery of those symptoms and signs, which indicate " permanent patency of the aortic valves," whereas it is well known that Dr. Corrigan, in his paper on this subject, was the

first to lay down rules for the diagnosis of that affection, and, I believe, that even at the present his communication contains all that we know on the subject.

Case VI.—*Bruit de Soufflet and Fremissement all over the Chest, both before and behind, and in the Arteries of the Neck, &c.; without Evidence of Pericarditis or Valvular Disease.*

A remarkably fine girl, about ten years old, named Mary Robinson, was admitted, November 1st, for symptoms supposed to depend on hydrocephalus. For this disease she was treated in the usual way, and appeared to improve gradually. Four days after admission the following note was taken: lies half asleep; occasionally crying out from pain in the head; her face is pale; lips puffed and pale; head drawn back; muscles of the neck rigid; there is no appearance of abscess or tumour in any part of the neck, or œdema. The head is hot, but the pupils are quite natural; there is a very remarkable pulsation in both carotids, attended with loud bruit de soufflet and thrill; the action of the heart is violent, its sounds loud, and with the first is heard a very loud bruit de soufflet, which is not confined to the cardiac region, but is heard all over the chest, *both before and behind*, and in every situation there is a strong fremissement. There is no bruit in the abdominal aorta; she has no dyspnœa, palpitation or cough; no pain on pressing over the heart, or pushing up the diaphragm against the apex of the organ. Pulse 100, pretty strong and full; digestive functions natural; skin hot.

She remained in the Hospital for ten or twelve days after the above note was taken, the bruit and thrill gradually became less distinct, but at the time of her departure they had not entirely disappeared.

In the case just detailed, a most remarkable feature was the intense fremissement or *thrilling vibratory motion*, preceptible by the hand on whatever part of the chest it was placed. This

thrilling motion appeared nearly equable throughout all the pectoral regions, and was synchronous with the systolic motions of the heart and a loud bruit de soufflet, which, likewise, was equally audible all over the chest. The phenomena in this case were, in my opinion, totally unconnected with pericarditis or valvular disease, and the result showed that opinion to be correct, for the physical phenomena disappeared under the use of nervous medicines and nutritious diet. It becomes interesting to determine, first, how we are to distinguish such a case from pericarditis or valvular disease; and secondly, how are we to account for the physical signs which this girl exhibited. With respect to the first question, it may be thought, that a thrilling vibratory motion so intense, and a bruit de soufflet so loud, and both nearly equable all over chest, could not be produced by pericarditis, but this is not correct, for I saw along with Dr. Parkinson, a case in North Great Charles-street, where a bruit de soufflet as loud, and a vibration as intense were established all over the chest in the interval between our morning and evening visit, in a gentleman labouring under pericarditis. I regret that I took no note of this case at the time, and consequently cannot say whether the bruit de soufflet and thrill extended to the carotids. I regret this the more, because if they did not so extend the diagnosis between such a case and that of our patient Robinson would be obvious. The absence of any dyspnœa or other irregularity of the respiratory function, made it evident, that in Mary Robinson the thrill and bruit were unconnected with pericarditis, for pericarditis could not give rise to such phenomena except when most intense, and when thus intense it always produces functional derangements easily to be recognized.

With respect to the diagnosis between the phenomena observed in our patient and those which occur in valvular disease, it is sufficient to remark, that in the latter the thrill and bruit are never equally diffused over the whole back and front of the chest. Next, with regard to the cause of these phenomena, it

is to be held in mind, that similar physical signs are produced by vibrations arising from the blood flowing through roughened arteries or diseased valves; a result sufficiently explicable by ordinary principles of acoustics; and secondly, that they may be caused by pericardial friction in pericarditis. Physiologists have applied themselves to the explanation of the thrill and bruit so often heard in hysterical, nervous, and exhausted patients; but I am not aware that these phenomena have, in such persons, been observed to extend beyond the vascular system, or have been imparted in all their intensity to the whole parietes of the chest.

I do not feel myself at present enabled to offer any solid reasons for either supporting or opposing the opinion generally advanced concerning the cause of frémissement or bruit in the arteries of the nervous or debilitated; and I am equally at a loss to account for these phenomena, as observed in the thoracic parietes and arterial system of Mary Robinson, and my consciousness of the difficulty of offering any adequate explanation is increased by the fact, that they were entirely absent in the abdominal aorta and arteries of the lower extremities.

ART. IX.—*Researches on the Pathology and Diagnosis of Cancers of the Lung and Mediastinum.* By WILLIAM STOKES, M. D., M. R. I. A., Regius Professor of Physic in the University of Dublin. Physician to the Meath Hospital, Secretary to the Pathological Society of Dublin.

I PROPOSE, in the present paper, to examine into the actual state of our knowledge of the history of thoracic cancer, and to examine how far its diagnosis, direct or indirect, can be considered to be established.

Although the disease seems not unfrequent in these countries, yet we have but few recorded examples of the affection, and still fewer instances in which any accurate observations of symptoms have been made. It is, in fact, only within the last

few years, that this disease has been examined with reference to its symptoms or physical signs.

It may be desirable to examine some of the cases recorded previous to the time of Laennec, but we do not presume to say that all the examples will be given; but the examination will be useful in showing the state of knowledge possessed on the subject.

In the 22nd Epistle of Morgagni, Article 22, we read of a woman aged 40, who had laboured under a cancerous tumour, which had been extirpated. In the course of a year, she was attacked with pungent pain in the left side of the chest, fever, and difficulty of breathing. The disease seemed to have been treated as pleuro-pneumony. She became affected with anxiety, feeling of suffocation, and intermitting pulse: but there was no pain, sputum, or fever, unless toward the close of the disease, when slight fever supervened. She complained of extreme loss of strength and voice, as if from ulceration of the throat, in which, however, no lesion could be discovered; she was emaciated and had nocturnal dyspnœa. The left cavity of the chest contained a bloody fluid mixed with pus; the lung exhibited a white, firm, and steatomatous mass, giving out matter similar to pus when cut by the knife; the rest of the lung was less hard and engorged with blood; the right lung was less diseased than the left, but contained smaller steatomatous masses, surrounded by peculiar cysts; both lungs strongly adhered to the thoracic parietes. The same author speaks, Epistle 20, Article 39, of a cancerous ulcer in the lung of a patient aged 66, but the details of the case are extremely scanty. Some other cases are given by Morgagni, but they do not possess much interest, and as they have principally reference to cases in which the internal was preceded by external cancer, they have but little value as regards the object of the present investigation.

In the first case, we may remark upon the absence of the symptoms of pain, fever, and cough, while the emaciation and

increasing difficulty of breathing pointed out a progressive disease of the lung.

In Van Sweiten's Commentaries a remarkable case is given, in which the symptoms were those of excentric pressure,* " in a man upwards of 50 years' old, who had a long time perceived that the food and drink taken in was obstructed about the upper part of the sternum, after which it would sometimes pass by the obstacle there seated into the stomach; but more frequently, after staying some time, and exciting a cough or sickness, it would be again expelled through the mouth, together with a great quantity of tough phlegm. After the patient's death, the right lung was found scirrhous in its upper part, thrusting the mediastinum and œsophagus towards the left side, and so much compressing the cavity of the œsophagus, that the tube appeared greatly dilated above the obstruction by the aliments which had been retained there in order to be swallowed; towards the upper part of the neck it again recovered its natural dimensions."

Under the name of cancerous phthisis, we find three cases of the disease related by Bayle.

Case I.—A man, æt. 55 years, of bilious temperament, was attacked with dyspnœa, a dry cough occurring in paroxysms, and pains of the chest. The skin became gradually yellow, although the conjunctiva preserved its natural colour. Towards the tenth month of his disease, the skin became dry and rough, and the cough, which was frequent, was followed by scanty mucous expectoration, after some time succeeded by slight hæmoptysis, which continued for seventeen days. Fifteen months elapsed, yet the patient's strength was scarcely diminished; the expectoration became purulent, and he sometimes

* See Commentary on the 797th Aphorism. In this case the signs of excentric pressure, which in my work I have made the basis of my second division with reference to diagnosis, are particularly worthy of attention.

felt severe pains in the chest. Soon after this, he was attacked with a dynamic fever, from which he recovered in about a month; the cough increased, the expectoration became more abundant, and the patient rapidly emaciated. At this time, a soft and fluctuating tumour, unaccompanied by pain or change of colour of the skin, appeared above the humoral extremity of the right clavicle. The patient sunk in the eighteenth month of his disease.

Dissection.—Both lungs were found to contain numerous tumours of a rounded form, and of a structure similar to that of fresh lard; they had a shining white colour, and were of various degrees of hardness. Some red capillaries, similar to those of the brain, could be seen ramifying in their substance. From some of these tumours a whitish pus of a creamy consistence could be expressed, while others were converted into true ulcerations, around which the pulmonary tissue was slightly hardened; abdominal viscera healthy.

Case II.—A man, æt. 35 years, was affected with a tumour on the forearm, which, after continuing for ten years, increased so rapidly as to render amputation necessary; but the operation was postponed on account of dyspnœa, which had existed for some time. On this subsiding, the operation was performed, but the pectoral symptoms returned, and the patient died with suffocation on the twentieth day after operation.

The lungs contained numerous tumours of the cerebriform matter, of different degrees of consistence, and supplied by capillaries. In some, excavations could be perceived, filled with a serous or bloody fluid; some of which were lined with a delicate and vascular membrane, while others seemed to result from the dèstruction of the cerebriform matter itself.

The pulmonary tissue between the tumours was perfectly healthy.

Case III.—A man, aged 72 years, had enjoyed good health until within six weeks of his admission into hospital. His disease set in with pains affecting the whole body, but principally

engaging the chest and epigastrium. A slight cough, with white and opake expectoration, set in, the appetite failed, and the bowels became obstinately costive; the liver was enlarged and irregular, filling the epigastrium, and extending almost to the umbilicus. Three hard, indolent, moveable bodies, of about the size of nuts, were found to exist in the epigastric and right hypochondric regions.

On dissection, the lungs presented few adhesions, and appeared extremely healthy. On cutting through them, the root of the left lung was found occupied by a mass of shining, white appearance, in the interior of which, red capillary vessels could be seen. In the centre of this substance, which resembled brain, and also in the lung itself, tuberculous masses could be detected, easily distinguished from the cancerous matter by their yellow, opake appearance; several small tuberculous cavities were found in the remainder of the lung. The liver contained numerous cerebriform masses, and the moveable subcutaneous bodies were evidently of the same nature as the internal tumours.

When I published my observations on the Diagnosis of Cancer of the Lung,* I endeavoured to express the state of our knowledge of the subject as follows:

" Cancerous disease of the lung is met with in two forms; in the first, a degeneration of the lung occurs, and the organ is transformed into a cancerous mass without the production of any tumour. In the second, the scirrhous or encephaloid matter forms a tumour, at first external to, and ultimately displacing the lung. In neither case can we apply any direct diagnosis; and I do not know how the first could be determined with certainty. The symptoms are always obscure, and the physical signs being merely those of solidity, more or less extensive, the greatest difficulty exists in making an accurate diagnosis. Repeated observations, indeed, might lead us to doubt whether

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* See my Treatise on Diseases of the Chest.

the lesion was any ordinary disease, and the existence of external cancer would give a probability, that the internal affection was of the same nature. But, in a case seen for the first time, and in which no external disease existed, we have no means by which its nature could be positively determined.

"But, in the second case, the physical condition of parts is different, and we have a mass producing compression, displacement, and obliteration of organs, and all the physical signs of an intra-thoracic tumour. The lung may be displaced; the œsophagus, trachea, or bronchial tubes, compressed, the subclavian or carotid arteries, or the vena innominata obliterated, *leaving no doubt of the existence of a tumour, the nature of which must be determined by other means.*"

Since that period, however, I have been enabled to arrive at a direct diagnosis of the first form of cancer. I have also been fortunate enough to meet with a remarkable case of ulcerated cancer of the lung, and have extended my observations upon cancerous tumours within the thorax. So that we can now affirm, without presumption, that in many cases of this disease, whether it affects the lung simply, or occurs as a mediastinal tumour, a direct diagnosis can be arrived at. By direct diagnosis, I mean the discovery of the internal disease, in cases where there is no recognized cancer in other situations, such as the mamma, uterus, extremities, &c.

We may now enumerate the different forms of thoracic cancer which have fallen under our observation. It is scarcely necessary to say, that some of these have already been noticed by others.

1st. Isolated and generally well-defined encephaloid tubercles of a rounded form, the intervening tissue healthy, and the tumours equably distributed through both lungs.

2nd. Isolated masses of irregular forms; sometimes coinciding with a mass of complete cancerous degeneration.

3rd. Tubercles of various species of cancer coexisting,

such as scirrhus, the encephaloid, and the black spongiform cancer.

4th. Simple degeneration of the whole or part of a lung into the homogeneous encephaloid matter.

5th. Encephaloid tumours of the posterior mediastinum compressing the lung.

6th. The same condition combined with cancerous degeneration, and cancerous tubercles of the lung itself.

7th. Cancerous tumour of the anterior mediastinum.

8th. Tumours of fluid white cancerous matter perfectly encysted, and surrounding the trachea and œsophagus, combined with a white cancerous infiltration of a portion of the lung, and cancerous coagula of the bronchial tubes.

9th. Cancerous degeneration of the whole lung, with deep-seated and superficial ulcerous action, extensively separating the lung from the pulmonary pleura.

Before proceeding further, I will enumerate the combinations with other diseases, which have fallen under my observation. They are,

1st. The combination of homogeneous cancer of the lung with empyema.

2nd. Cancerous tumour of the posterior mediastinum with gangrene of the lung.

3rd. Cancer of the mediastinum and lung, in combination with dilated tubes.

4th. Cancerous tubercles of the lung with bronchitis.

With respect to those cases of pulmonary cancer, in which the malignant matter is deposited in the form of isolated tubercles throughout the lungs, our information is still extremely scanty. The tumours in some cases are purely encephaloid; in other, they are found of scirrhous hardness; and in a third class, these varieties are combined in various degrees. Of this last variety, an interesting specimen was exhibited by Dr. Law, at the Pathological Society, during the session 1838, 1839; and at the first

meeting of the society, Sir Philip Crampton exhibited the recently removed parts in a case of this disease. The lungs contained a large number of encysted tumours, the contents of which consisted of two substances; the one a soft and spongy structure of a dark-brown colour, the other a dark coloured fluid, which spurted out when an incision was made into the tumour. The structure of the tumour exactly resembled that of the left testis, which had been removed by Sir Philip Crampton three months previous to death; bronchial glands healthy.

A remarkable instance of the latency of this form of cancer is given by Dr. Hughes, in his third case.* Here the disease of the knee joint, however, may have prevented the occurrence of pulmonary symptoms.

A girl, aged 14, was admitted into Guy's Hospital, for an affection of the knee, January 6th, 1841. She died six months after. During her stay in the hospital, she never had cough, dyspnœa, hæmoptysis, or any other symptom referrible to the chest.

Dissection.—The knee joint was converted into a large cancerous mass; the lungs contained numerous tubercles, about the size of peas and chesnuts; firm, roundish, nodular, semi-cartilaginous, somewhat translucent, and some very earthy; the heart was small.

At the first Meeting of the Pathological Society for 1839, 1840, Professor Harrison exhibited the recent parts in a case of medullary tumour of the pelvis. In this case, the lungs contained a great number of small tubercles and masses, which presented the characters and structure of medullary sarcoma; the intervening pulmonary tissue was healthy; a large medullary tumour existed in the pelvis. The subject of the case was a young woman, æt. 20, of a robust and healthy appearance. About a week before her death she complained of some dyspnœa; but the stethoscope did not indicate the existence of any organic lesion. She died rather suddenly.

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* Guy's Hospital Reports, 1841.

There are two circumstances common to all the cases of this disease which we have seen; one, the nearly equable distribution of the cancerous deposits over both lungs; the other, the healthy condition of the intervening tissue. We shall return to this subject when speaking of the general diagnosis, and here merely remark, that the physical conditions above stated throw great difficulty in the way of direct diagnosis.

CANCEROUS DEGENERATION OF THE LUNG.

Of the different forms of thoracic cancer this seems to be, perhaps, the most frequent. As the first case in which any accurate physical examination was instituted is that published by Dr. Graves, I shall here give an abstract of it.

CASE I.—*Extensive Cancerous Degeneration of the Right Lung; Want of Agreement between the Physical Signs and those of ordinary Pulmonary Diseases.*

A man, æt. 36, laboured for about a year under cough, hoarseness, dyspnœa, and scanty mucous expectoration, occasionally mixed with blood. He had occasional stitches in the right side and pain in the shoulder, and complained of dysphagia, referring the obstruction to the lower part of the neck. The face was bloated, pale, and slightly œdematous; the eyeballs seemed enlarged, and the nostrils were greatly dilated during inspiration; the right jugular vein was much distended, as were the veins in the right axilla; and on the abdomen, corresponding to the situation of the superficial epigastric artery, two veins, turgid and dilated to the size of swan-quills, pursued a remarkably tortuous course along each side of the linea alba. The intercostal spaces were not obliterated; but those on the left acted more powerfully than on the right side. This side was universally dull, and measured about half an inch less than the left; the dulness extended to an inch beyond the sternal mesial line. In the supero-anterior part of the right side, the respiration was tracheal, the voice resonant; but no rales were audible in any part of the chest. The right side of the chest,

during respiration, moved much less than the left, and the vibrations of the voice, as perceived by the hand, were feebler than those on the opposite side. The tracheal respiration in the front of the lung soon disappeared, but could be feebly heard at the root of the lung.

On dissection, the right pleura was found thickened and dense; in place of the right lung was found a solid mass, weighing more than six pounds; it was firm, homogeneous, and its substance resembled that of brain partly hardened by artificial means. The tumour did not distend the side, but protruded the mediastinum to a short distance beyond the mesial line.

In this case the most remarkable phenomena were:

1st. The absence of rale.

2nd. The want of coincidence between the physical signs and those of pleurisy, pneumonia, or tubercle.

3rd. The contraction of the side with extension of dulness beyond the mesial line.

4th. The varicose condition of the veins.

5th. The appearance of external cancerous disease towards the close of the case.

This patient was for a considerable time under my observation, and afterwards under that of my colleague, and no opinion was formed, unless that the disease was different from any of the ordinary affections of the lung.

Case II.—*Cancerous Degeneration of the whole Left Lung; Displacement of the Heart; Appearance of external Tumours two Months before Death.**

A peasant, æt. 24, of strong and healthy constitution, and who had always enjoyed good health, was attacked in the autumn of 1834 with pleurisy, which yielded to antiphlogistic treatment. In the following December he had a second attack; he complained particularly of dyspnœa, and of acute pain in the left side every time he took in a deep breath.

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* Heyfelder, Archives Generales.

These symptoms were aggravated by coughing, or by change of position to the left side. General and local bleeding relieved the pain, but the cough resisted all treatment. He got a fresh attack of cold, followed by increase of suffering. He had the most severe pains shooting through the affected side, extending from the shoulder down to the short rib, and from the sternum to the vertebral column. Antiphlogistic treatment was again resorted to without any benefit. I saw him now for the first time. He was lying on his back, having the right side of the chest a little elevated; he had a frequent dry and short cough, accompanied with great dyspnœa. The left side of the chest was fixed during inspiration and expiration; the sternum was pushed forward and towards the right side; there was a remarkable dilatation of the left side, just below the mamma; percussion gave a dull sound over the left side, and a clear one over the right; over the left side the respiratory murmur was lost; over the right it was loud, though unequally so. The patient could get up and walk about his room with less distress than lying on the left side produced; pulse quick, small, variable, but not intermitting; sleep disturbed and interrupted by the cough; loss of appetite; slight thirst; tongue clean; countenance expressive of suffering; surface lead coloured and livid; breath free from fœtor; slight emaciation; skin dry.

A month after, a tumour appeared on the front of the left side of the chest, about the size of two fists, resembling the female breast; no change in the physical signs; the pulsations of the heart were felt to the right of the sternum, and a visible pulsation was observed both in the carotid and temporal arteries; the left side more dilated; the voice was weak and without resonance; the patient could not lie on the right side; left side fixed during inspiration; cough dry and persistent; colour of surface leaden; expression of countenance more indicative of distress; pulse unsteady and intermitting; dyspnœa increased.

"I confess," says Heyfelder, "I could not form any satisfactory opinion as to the nature of the complaint. The want of

ægophony, the size of the chest, the shape and situation of the tumour, prevented me considering it an empyema."

From this time out I saw the patient daily. Two months before his death the axillary glands became enlarged and hardened, and two tumours formed under the left clavicle. The patient died dropsical, having, up to the moment of death, the harassing cough, attended with expectoration of a glairy mucus.

Dissection.—The right pleura was full of serum, and the lung was engorged and adherent to the diaphragm; it was free from tubercle. The heart was compressed, and smaller than natural, and in every situation adherent to the pericardium, which latter adhered to both lungs. The left lung was fixed to the ribs; it was converted into one mass, completely filling the left pleural cavity, and extending over into the right one. It was transformed into a solid white lardaceous mass, totally devoid of nerves, blood-vessels, and small bronchial tubes. Towards the centre, the mass was soft and brain-like, and of a greyish-white colour, presenting an opening, the remains of the large bronchial tube. The pulmonary arteries and veins were obliterated or changed into ligamentous bands, up to their attachment to the heart. Our external examination of the left side in front, disclosed a large mass of the same lardaceous character, softened towards the centre, and communicating with the disease inside the chest, the intervening ribs being displaced and separated. There was no trace either of pectoral or intercostal muscles, and the ribs themselves were atrophied to an extreme degree. All the abdominal viscera were healthy. The left testicle and epididymis were occupied by scirrhus. The tumours under the clavicle and the axilla are not particularly described.

One of the most interesting circumstances in this case, was the growth of the external tumour during the last period of the patient's illness; a similar phenomenon was observed in the case published by Dr. Graves, in which, towards the close of the disease, three tumours appeared and increased with great rapidity,

they were on the forehead, the ramus of the lower jaw, and on the lumbar spinous processes; and, as in Bayle's case, they were unaccompanied by pain, soreness, or any inflammatory phenomenon. The first case in which the precedence of the visceral to the external cancer was recognized, is that by Dr. Graves, and the fact, of its having now been observed in three instances is quite sufficient to make it an important element in the diagnosis. It is very probable the occurrence has been often overlooked, from the singular latency and freedom from inflammatory action under which these external tumours occur. In the first case the discovery of the tumours was purely accidental.

The two following cases are given by Dr. Hughes in the communication already quoted.

Case III.—*Conversion of the Right Lung into a nearly Homogeneous Mass of Cancer.*

A man, aged 43, was admitted into Guy's Hospital, labouring under cough; pain in the right side of the chest, with expectoration of a frothy nature, tinged with blood; his legs were œdematous, as were also the right arm and right side of the chest; and his eyelids were puffy. He constantly lay on the right side, from the occurrence of severe dyspnœa when he turned to the left. The tongue was pale and moist; the skin dry; and the pulse frequent and feeble.

Physical Signs.—Complete dulness of the right, except just under the clavicle. It was also full and prominent, but in consequence of the œdema of the parietes, it could not be ascertained whether the intercostal spaces were protruded; complete absence of respiration at the lower part. In the mammary region it was tubular and distant, and under the clavicles harsh and hoarse; behind there was complete dulness, with absence of respiration in the subscapular region. In the scapular the respiration was tubular, with broncophony; no vibration on coughing or speaking, either before or behind; the left side of the chest appeared healthy, and the sounds natural, except that the respiration was

puerile. The œdema of right arm and side increased, and his dyspnœa prevented the least change of position.

Dissection.—The right pleura was universally and strongly adherent; the entire of right lung, except a small portion at its apex, was converted into a fungoid mass, which was generally white and pallaceous, except near the centre, where it was of a pink colour, and reduced to a diffluent pulp; and opposite the scapula, near the surface, where there was an irregularly shaped cavity, containing little or no fluid. In the bronchial tubes was much viscid secretion, and the mucous membrane was slightly congested. The left pleura was partially adherent from old disease; but the lung and the bronchial tubes on this side were healthy. Several bronchial glands were much enlarged, but did not appear to have assumed any of the characters of the malignant disease. The right auricle of the heart appeared considerably flattened, and the entire organ was pushed considerably to the left side, by the pulmonary tumour. There was nothing remarkable in the abdomen, except, that at the head of the pancreas was an enlarged gland, about the size of an orange, which contained a straw-coloured fluid.

Case IV.—*Cancerous Degeneration of the Upper Portion of the Right Lung.*

A woman, aged 50, caught cold two years before her death, during which time she suffered frequently from hæmoptysis. She was admitted into Guy's Hospital, August 19th, 1841, when she presented the following appearances: her countenance was pale and sallow, with a few enlarged cuticular veins in the cheeks; her legs were swollen; she had no pain, nor was she particularly emaciated; she lay on her back, with the shoulders rather raised, and somewhat inclined to the right, but could turn to either side, or get up without inconvenience; she complained of cough, accompanied with shortness of breath, and sanguineous expectoration; her tongue was slightly coated and moist; her skin unctuous and soft; her pulse frequent and fee-

ble ; her bowels regular. The expectoration consisted of white frothy mucus, with light crimson blood mixed through it. She had one absorbent gland, nearly as large as a pigeon's egg, in the right axilla, and a smaller one under the right clavicle; but had not been aware of their existence till they were pointed out to her. The superficial cutaneous veins of the right side of the abdomen were considerably increased in size, and rather tortuous.

Physical Signs.—Evident flattening below the right clavicle, extending down to the mamma ; the ribs moved very little, and were elevated *en masse* during inspiration; there was complete dulness and absence of respiratory murmur over the upper portion of this lung, both before and behind ; occasionally there was heard bronchial respiration, and now and then slight rale ; there was an imperfect pectoriloquy with an increased tactile vibration ; the morbid phenomena appeared to terminate at a defined line, just above the mamma, and to pass round the whole of the right side of the chest ; the lower portion of the right, and entire left lung appeared healthy. Her symptoms gradually increased in severity ; her legs began to swell, and orthopnœa set in, and two months after admission she died.

Dissection.—The left pleura was slightly adherent ; the left lung was crepitant throughout, and partially emphysematous; the right pleura was universally firmly adherent, and superiorly altered in texture by a white, flaky, malignant deposit ; the entire upper part of the right lung was converted into a mass of medullary fungus, the cut surface of which exhibited a dead white, cheesy substance, intersected with bands of cellular tissue. By slight pressure a creamy fluid exuded, together with portions of soft, brain-like matter, from cells, varying in size from a pin's head to a marble. The middle lobe contained some portions of the malignant growth, appearing like elongations or processes of the diseased mass above them, from being clearly connected with and traceable into it, and separated from each other by the intervention of healthy, or simply compressed lung.

The inferior lobe contained a few small detached masses of fungoid matter, and was posteriorly firm, dark-coloured, and lacerable, probably from gravitation. In the branch of the right pulmonary artery, going to the upper lobe, there was a small pedunculated medullary tubercle, and another on its external surface. The heart and pericardium were healthy.

Abdomen.—The liver had the nutmeg character, and presented one patch of malignant disease. Both kidneys and renal capsules presented small masses of medullary matter, and near the os uteri were found three pea-like scirrhous tubercles. The gland in the axilla was clearly affected with the same disease.

In a case given by Dr. Carswell, almost the whole of the left lung was converted into a dense substance, resembling a section of fresh pork. The lobular structure, however, of the organ, was very conspicuous; but the blood-vessels and bronchi were either greatly compressed or obliterated. Towards the upper extremity of the lung, the carcinomatous deposit was seen extending from lobule to lobule, and had made its way through the bronchi. The pleura costalis and pulmonalis were studded with tumours of the same kind, varying from the size of a pin's head to that of a walnut. Several of these tumours were seen on the pleura pulmonalis, the largest arose by a broad base, the others were round or pyriform, and attached by a peduncle.

In the next variety of the disease, we find cancerous tumours of the posterior mediastinum not unfrequently coexisting with the degeneration of the lung and isolated tubercles in its substance. These tumours are of various sizes, and are commonly of the encephaloid structure, and I have seen no example of their ulceration. As might be expected, they may produce all those effects of excentric pressure which are commonly observed in deep-seated aneurisms; thus, they may displace the lung, press on and diminish the calibre of the trachea or bronchial tubes, compress the œsophagus, so as to cause a fatal dysphagia, and obliterate the subclavian artery. I have seen no instance, however, of their inducing absorption of the bones, or forming ex-

ternal tumours, as is so commonly the case in aneurism. The occurrence of these signs of excentric pressure, renders the diagnosis of this form of the disease comparatively easy.

I have noticed but two varieties of this affection. In the first, which is not uncommon, the tumour is of a pure encephaloid structure, presenting rounded, but irregular masses, involving the trachea, œsophagus, and great vessels; while in the second, of which I have seen but a single instance, a ring of tumours, varying from the size of a hazle nut to that of a hen's egg, existed immediately above the bifurcation of the trachea. These tumours were all encysted; some containing a perfectly fluid creamy matter, while others contained a dark grumous liquid. The lungs contained many tumours of the same kind; there was no tubercle, but in various parts of the lung we observed portions infiltrated with a white liquid, perfectly similar to the contents of many of the tumours. Some of these portions were more than an inch and a half in length, and half an inch in depth. In many of the bronchial tubes, deposits of a pearly white cancerous matter, in a semi-fluid state, were discovered, having more consistence than that of the tumours, but not adhering with any force to the mucous membrane.

This is the only instance of cancer of the bronchial tubes which I have seen; but I find that Professor Carswell, in a case of the isolated form of cancer, gives a representation of a cancerous tumour attached to the mucous membrane of a large bronchial tube.*

It might be supposed that the case above stated was one of ulcerated cancer, but I entertain an opposite opinion from the fact, that in none of the masses could the transition from a hardened to a liquid state be observed; and this view is borne out by the infiltration of portions of the lung with a liquid precisely similar to that contained in the cysts, and by the analogous deposits in the bronchial tubes themselves.

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* Elementary Forms of Disease Fasc. iii. fig. 8, Plate II.

In my work on Diseases of the Chest, I have given two cases, in which the encephaloid matter formed a compressing tumour: in one the lung was engaged. I shall here give abstracts of these cases.

Encephaloid Tumour of the Posterior Mediastinum compressing the Left Lung and Œsophagus; Encephaloid Tubercles of the Lung.

A woman, æt. 30, had laboured for some weeks under frequent cough, with mucous expectoration. Her countenance was livid and anxious; the pulse quick and small; the dyspnœa considerable, and she had great debility. She complained of dysphagia, referring the obstruction to a point under the upper portion of the sternum; this symptom had latterly much increased. The clavicle, antero-superior, and infra-spinous regions of the left side sounded completely dull; here the respiration was distinctly bronchial, and the resonance of the voice approached to perfect pectoriloquism; over the rest of the lung the sound on percussion was clear, but the respiration was marked by bronchitic rales; in the right lung the respiration was puerile.

On dissection, the left lung was found compressed by an encephaloid tumour, which filled the posterior mediastinum, enveloping the trachea and œsophagus, and extending into the upper portion of the left thoracic cavity. At the left side, three distinct lobes or masses, each about the size of a pigeon's egg, were observed; one of which so pressed on the œsophagus, as to form an elevation on its internal surface. No ulcerative action had commenced; numerous masses of the same substance, varying from the size of a pea to that of a kidney bean, existed in the left lung; the right lung was healthy.

Encephaloid Tumour of the Posterior Mediastinum; Cancerous Degeneration, and subsequent Gangrenous Eschar of the Lung.

A man, æt. 45, of full habit, had, for four years previous

to his death, been subject to attacks of severe pain of the left side, generally attended with hæmoptysis. He was then seized with convulsions, followed by paralysis of the left side. The convulsive attacks frequently recurred; the pains in the side became more constant, extending to the shoulder and interscapular region, and he complained of oppression, wheezing, and palpitation, and had a constant mucous expectoration, deeply tinged with blood.

Two months previous to this patient's death he was not emaciated, nor had hectic fever; he complained chiefly of dyspnœa, and severe pain in the left shoulder. The respiration was stridulous; but the voice was unaffected, and the obstruction obviously existed lower down in the larynx. There was some dysphagia, and the left pulse was exceedingly small; over the whole upper part on the left, the sound on percussion was dull, with a distinct tracheal respiration; the lower lobe presented vesicular murmur, which was, however, extremely feeble when compared with that of the left lung. A distinct double pulsation, accompanied by a bruit de soufflet, existed in the upper sternal and subclavicular regions; no external tumour existed, but a distinct diastolic pulsation could be perceived when the hand was pressed on this part of the chest; this pulsation succeeded that of the heart, the impulse and sounds of which were natural. Some time previous to his death, the patient suddenly expectorated a quantity of fœtid purulent matter, and this continued to be copiously discharged for several days. A large mass of encephaloid matter was found to involve the left lung, from its apex to its root.

It surrounded the left branch of the pulmonary artery, and compressed the pericardium. When a section was made through the tumour, the pulmonary artery was seen compressed and flattened, so as to present an elliptical form, which could just admit a full-sized catheter. Beneath the tumour the lung seemed inflamed, and presented a cavity communicating with the bronchial tubes, and having all the characters of a gan-

grenous abscess.* There were no tubercles in the lungs, but a cancerous degeneration was obviously spreading from the root of the lung forwards.

In both these cases the sign of inequality of respiration, induced by the pressure of the tumour, was observed, and the situation of the disease was established by manifest dulness on percussion; but as in aneurism† this last physical sign is not always present. We read, in Andral's Clinique Medicale, the particulars of a case, in which a mass of melanosis compressed the right bronchus so as to diminish its calibre to nearly one-half; the respiratory murmur on the left side was extremely feeble, but on the right puerile; *the sound on percussion on both sides was equal.*

The two following cases are taken from Dr. Syms' paper, in the 18th vol. of the Medico-Chirurgical Transactions.

Encephaloid Tumour of the posterior Mediastinum, Cancerous Degeneration of the Right Lung, &c. &c.

A tall, well-formed young woman, æt. 23, and who had enjoyed good health till near the period when her present disease was first noticed. A short time before her death she complained of great difficulty of breathing, frequent cough, and considerable pain in the chest, with other symptoms supposed to indicate a severe inflammatory affection of the lungs. The usual remedies were had recourse to for her relief, but the symptoms did not give way to the treatment adopted, and in a short time others appeared of a more formidable character. She had also swelling in the lower part of the abdomen, and on examination, several distinct and large tumours could be felt rising out of the pelvis. Above the clavicles, and along the blood-vessels of the right side of the neck, there ware a number of enlarged lymphatic glands of various sizes.

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* When I speak of the combination of thoracic cancers with other diseases, I will refer to the occurrence of gangrene in this particular case.

† I would here refer to my paper on the Diagnosis of Aneurism, Dublin Medical Journal, vol. v.

Her disease advanced rapidly; she got ascites; the tumours rose higher, and increased in magnitude; the lower extremities became œdematous; the dyspnœa increased, and also the cough, but she had no expectoration. A remarkable symptom now occurred: *the sounds of the ventricles were perceived in their usual situation, but the impulse of one or both ventricles was equally distinct over a considerable part of the right side of the thorax anteriorly. Her right arm became painful and enormously swollen*, presenting all the signs of phlegmasia dolens from inflamed veins; she constantly lay on her back, and was unable to vary her position. She soon after died.

Dissection.—On opening the thorax, a tumour of very considerable size was found imbedded in the right lung; *it was closely attached to the great vessels at the base of the heart.* It was moveable within the thorax. On making sections through it, some portions appeared firm and fibrous, and others softer and brain-like. Its colour was of a dirty white, intermixed with streaks of a lead colour, apparently in the direction of its few blood-vessels. It closely involved the bronchi and blood-vessels at the root of the right lung, and was firmly attached to the pericardium and vessels immediately issuing from the heart. Nothing remarkable was observed in the left lung, or the texture of the heart. On dissecting out the right subclavian vein, it was found to be filled with successive layers of fibrine, the product of inflammation, and the valves at its junction with the jugular were seen distended with this deposit.

Several tumours of a similar nature were attached to the uterus and its appendages.

Case II.—*Encephaloid Tumour of the Posterior Mediastinum, producing Depression of the Diaphragm and Displacement of the Heart. Cancerous Degeneration of the Right Lung.*

A strong, athletic man, aged 43, was attacked about a year before his death with hæmoptysis, cough, dyspnœa. The

hæmorrhage frequently recurred, but he was able to follow his usual occupation for several months after, when his symptoms become much aggravated, and he was then admitted into St. Mary-le-bone Infirmary. He now laboured under severe dyspnœa and cough, attended with mucous expectoration, and he had frequent attacks of hæmoptysis; a considerable part of the right side of the thorax, anteriorly, sounded dull on percussion, and respiration was inaudible; the jugular veins were dilated to three times their usual size, and, with part of the subclavian, presented large tumours above the clavicles, alternately increasing and diminishing in size; his face was swollen; he complained of severe headach; sharp pulse; *very little emaciation;* bowels costive. Two months from the date of admission he died, previous to which his sufferings had been excessive.

Dissection.—On raising the parietes of the thorax, a large tumour, several inches in circumference, came into view on the right side. The tumours of the right lung occupied about two-thirds the capacity of the entire chest. *The diaphragm was pushed down,* and the space for the left lung was occupied by the tumours from the opposite side; the heart was situated several inches lower than usual, and pushed much beyond the mesial line; the *left lung* contained much black matter, and in some situations was indurated, and presented a red hepatization. There was no trace of any other disease in this lung. The *right lung* occupied a considerable space, for the morbid growth from it encroached upon the abdomen; a great portion of it was consolidated, apparently from old hepatization, and some parts presented an infiltration of pus. The tumour was extensively attached to this lung, it also pressed upon the trachea and completely surrounded the right bronchus, with several of its bifurcations. It also pressed upon the posterior part of the right auricle, so as to burst it inwards, and, in one part, a small tubercle, about the size of a pea, had penetrated; it had also made its way into the cavity of the left auricle, and two tubercles, suspended by narrow peduncles, hung down from the tumour into

this cavity. All the great vessels were connected to the tumour except the inferior cava. The tumour presented various degrees of consistence; in some situations it was hard and cartilaginous, in others it was soft, though solid; and in a third it was pulpy and fluctuating, but retained its cellular, or fibrous appearance. On making a section of any part of it a milk-white fluid escaped, resembling cream. The firmest portions of the tumour were connected with the disease of the lung, the softest portion was that situated between the trachea and bronchi, the great vessels, and attached to the heart; it was almost entirely of a milk-white colour, in some places slightly tinged by the ramification of minute blood-vessels, whose number was extremely small; in some parts the tumour could be removed from the lung, and a membrane resembling the pleura was observed to intervene. The abdominal viscera were all healthy.

The foregoing cases by Dr. Syms present some interesting points for consideration, to which we shall briefly allude. In the first Case (vide page 229), we see a patient attacked with severe symptoms of pulmonary disease *which resist ordinary treatment.* This circumstance is not without its value in the diagnosis of the heterologous diseases of the lung. I have elsewhere shown its importance in the diagnosis of the acute development of tubercle; and in cancer of the lung, the accompanying signs of irritation are observed to be either uninfluenced by treatment, or, if they are removed, they return again and again without apparent cause. Whether the cancerous masses themselves form foci of irritation, or that the irritation itself is of a specific character, and, like other affections of this kind, but little influenced by ordinary treatment, remains to be determined. I incline strongly to the latter opinion, from a fact of finding, in many cases of isolated cancer of the lung, the intervening tissue in a perfectly normal state.

There are three circumstances in this case of great importance in the differential diagnosis, viz.:

1. The rapid formation of internal and external tumours.

2. The occurrence of ascites and œdema.

3. The transmission of the impulses of the heart over the diseased side.

It is hardly necessary to remark, that the combination of all these circumstances forms a group of phenomena for which there is no parallel in any recorded case of pneumonia, tubercle, or pleuritic effusion.

The pulsation of the lung has been, for the first time, described by Dr. Graves, in a case of acute pneumonia. In this instance, the pulsation of the heart was felt all over the right lung, at a time when the organ was in an engorged, and, as it were, semifluid state; but it is unlikely that, in the diagnosis of cancer, any difficulty will arise from the knowledge of this fact, inasmuch as the pulsation in Dr. Graves' case occurred *at an early period and in an acute disease;* so that the expression of our knowledge on this subject will be, that an extensive pulsation of the lung in an acute case points out an engorged condition; but, in a chronic case, has only been observed in cancer.

In the second case, the frequently recurring hæmorrhage and the absence of emaciation in so chronic a case, are circumstances not in accordance with the usual diseases of the lung. I have noted similar facts in another case already spoken of, and if to these be added the very extensive dulness and absence of respiration, combined with the extreme dilatation of the jugular veins, the existence of a group of phenomena, belonging only to cancer of the lung, must be admitted.

CANCEROUS TUMOURS OF THE ANTERIOR MEDIASTINUM.

On this subject I cannot at present give any original observations; Cruveilhier and others have recorded examples of cancerous deposits beneath the sternum in cases of malignant diseases of the breast, but we want observations of primary cancerous disease in this situation. It is probable, however, that the diagnosis would not be found to be difficult, at least in cases

where the tumour was sufficiently large to compress the trachea or great vessels, for in this situation the aneurismal or non-aneurismal character of the disease would be easily determined.

ULCERATED CANCER OF THE LUNG.

That ulceration of cancers of the lung is a rare occurrence, must be admitted on examining the recorded cases of the affection ; I have only seen one example of it, which I will presently describe. I have never met with it in any case of mediastinal tumours, even where the lung itself was engaged; and it seems probable, that some of the cases of supposed ulcerated tubercles of the lung were but examples of original deposits of cancerous matter in different varieties and degrees of consistence. Bayle has described two cases in which the lung contained tumours of cerebriform matter, in which excavations existed, seemingly the result of ulceration of the cancer. I have stated in my work, that no instance was recorded in which the stethoscopic signs of ulceration had been observed, and this, which sufficiently shows the rarity of the occurrence, will be found to have been hitherto the case.

Ulcerated Cancer of the Lung, with extensive Separation of the Pleura ; singular Variations of the Physical Signs.

A woman, æt. 35, was admitted into my wards on the 21st May, 1838. Four months previously she had been in the enjoyment of good health, when she was exposed to cold, and, for the first time, was attacked with cough, and severe pain in the right side, which continued up to the period of her admission. Her complexion was sallow, and she had a remarkably cachectic appearance ; she complained of a constant, troublesome cough, with copious viscid mucous expectoration, frequently mixed with blood, and she stated that spitting of blood had frequently occurred during the course of her illness ; the pain was referred to the right mammary region, to the postero-inferior part of the right side, and to the shoulder ; in the two first of these situations, the integuments were so tender, that she could scarcely

bear the application of the stethoscope. Decubitus on the left side; pulse 108; night sweats.

Physical Signs.—Over the anterior portion of the right side, the sound on percussion was distinctly tympanitic; this extended from the clavicle to below the mamma; there was no bruit de pôt felé, nor was the sound similar to that given by a large cavity; it was a true tympanitic clearness, but such as is observed in cases of empyema and pneumo-thorax, when the liquid effusion has so far increased as to leave but a thin stratum of air within the pleura; bronchial rales were heard over the surface of the lung, and an obscure bronchio-cavernous respiration could be perceived along the sternum; the voice was very resonant over the whole surface, and a strong vibration communicated to the hand, but there was no pectoriloquism; posteriorly, the lung was everywhere dull, with a very feeble murmur, mixed with muco-crepitating rale; the left side gave a natural sound on percussion, and the murmur was puerile, unmixed with any rale.

The next report was made on the 28th of May. The general symptoms and signs remained the same, except that the tympanitic sound was less distinct.

In the recumbent position, the respiration anteriorly was exceedingly feeble; but, when she sat up, a loud musical rale was heard over the right side. On coughing, a large mucous rale, approaching to gargouillement, could be heard under the third rib.

31st. The cavernous character of the respiration appeared to increase, and the degree of tympanitic sound has varied more or less from day to day.

June 6th. The tympanitic sound has disappeared, the antero-superior portion being completely dull, while below and to the side of the mamma the respiration is decidedly cavernous. The pain in the side was last night extremely severe, extending to the stomach.

9th. The tympanitic sound has in some degree returned.

10th. On this day complete dulness was found extending from the clavicle to the inferior line of the mamma; but from this point to the last false rib, there was manifest tympanitic clearness. The patient expectorated a large quantity of blood.

12th. Another change in the phenomena was observed; under the clavicle the sound was what we have elsewhere described as tympanitic dulness; lower down there was complete dulness, and at the most inferior portion the tympanitic clearness remained; here the respiration was feeble and accompanied by a large mucous rattle; about the centre of the lung it had a tracheal character, while under the clavicle it was feeble, but apparently vesicular.

13th. The sound of the subclavicular region has become completely dull, while the tympanitic clearness observed inferiorly has extended up to the third rib.

17th. All tympanitic sound has now disappeared, and from the clavicle downwards there is complete dulness. From this period but little change took place in the physical phenomena, except that on the 3rd of July, the posterior part of the chest gave at different points some of the tympanitic sound on percussion. During this period the principal symptoms were, the sweats, diarrhœa, severe pain, and tenderness of the lower part of the right side, dyspnœa, and œdema of the face, eyelids, lower extremities, and the left hand. She died on the 12th of July, the duration of her illness being between five and six months.

Dissection.—The pleural cavity was found completely obliterated; but, through the serous membrane, the lung could be seen not collapsed, apparently solid, and of a yellowish-white colour. The whole organ was converted into a mass, having less consistence than is observed in ordinary encephaloid disease; nor was its structure homogeneous, but rather granular, and exhibiting traces of the pulmonary lobules and cells, infiltrated every where with a pearly-white gelatinous fluid, giving

it a semitransparent appearance. A large portion of the lung was burrowed by anfractuous excavations, communicating on the one hand with the bronchial tubes, and on the other terminating in fistulæ, running in various directions to the surface of the lung, where they terminated in superficial cavities, containing air and a whitish purulent fluid, bounded on the one hand by the posterior surface of the pulmonary pleura, and on the other by the degenerated pulmonary substance. This dissection of the pleura from the lung extended over almost the lower two-thirds of the organ. Towards the rest of the lung there was a mass, exhibiting the cancerous disease in its more ordinary appearance; part of this was white, another portion more red and vascular, and a part of it was quite broken down. The pericardium contained a large quantity of fluid; the left lung and pleura were healthy, with the exception of a few small hydatids, which existed in different portions of the lung.

I have given this case at considerable length, as an example of an hitherto undescribed condition of the lung, and as the physical phenomena presented combinations and modes of succession which have never before been observed. And as in this case I never ventured on giving a diagnosis, the account of the physical signs may be received with greater confidence. Many opinions were formed as to the nature of the disease, by the members of the class, and by several practitioners who visited the patient; thus, some conceived it to be an example of tuberculous phthisis; others, chronic pneumonia, with ulceration; some, empyema and pneumo-thorax. It was conjectured, at one time, that there was a hernia of the abdominal viscera through the diaphragm; at another period, it was supposed that the liver was in a state of emphysema, of which a remarkable example had occurred some time previously in the hospital; and it was also suggested, that the case might be an example of the tympanitic sound occurring in typhoid solidifications, which has been described by Dr. A. Hudson.

When I first examined the patient, soon after admission, I

conjectured that the physical phenomena might be explained by the existence of a superficial layer of dilated cells anteriorly, while tubercle in great quantity existed in the rest of the lung; but, on my second examination, on the 28th of May, the phenomena were such as to render this notion quite untenable.

We see in this case, the singular phenomenon of an empyema and pneumo-thorax communicating with the bronchial tubes, yet not in the cavity of the pleura, but between the lung and the pulmonary layer of that membrane; and it is obvious, that the singular variations of the phenomena were attributable to the varying proportions of liquid and æriform effusions in the cavities which separated the pleura from the subjacent lung; and the extended resonance of the voice, and strong vibration communicated to the hand, together with the tracheo-cavernous respiration are all explained by the condition of the parts.

Finally, we may observe, that although with physical phenomena totally different from anything hitherto observed, the same general principle is applicable to this as well as many other recorded cases of cancer, viz., that in cases where the phenomena in their nature or combinations are different from those of pneumonia, tubercle, pleurisy, and pulmonary apoplexy, we have good reason to suspect the existence of cancer.

GENERAL PRINCIPLES OF DIAGNOSIS.

In examining the principles of diagnosis, we may take three physical conditions of the cancer for consideration:

1. Cancerous tubercles.

2. Degeneration of a part or the whole of a lung into the homogeneous cancer.

3. Mediastinal tumours.

In many of the first form of cases we are deprived of some valuable sources of physical diagnosis. Thus, it often happens that we cannot avail ourselves of the signs of irritation, so important in ordinary tubercle, for, although great quantities of cancerous masses exist, the intervening tissue may preserve

a singularly healthy condition. There is a much more intimate association between ordinary tubercle and inflammation of the organ in which it is deposited, than in this affection.

In the next place, we are commonly deprived of all the signs of ulceration so valuable in phthisis. I have never met with a case of isolated cancerous tubercles in a state of ulceration, and, if anything was wanting to increase the difficulties, the test of comparison is often inapplicable in these cases, from the nearly equable distribution of the cancerous tubercles over the whole of both lungs, so that it is possible that a large quantity of cancerous masses might exist, and the sound on percussion be every where *equal, and not dull.*

I have no experience of this form of the disease in relation to diagnosis; but, even in this difficult case, assistance is afforded us by auscultation, in the discovery of bronchitis, coming on without *any apparent* cause; at first, amenable to treatment, but returning almost immediately, though the patient has not been exposed to any of those influences that usually give rise to bronchitic inflammations. These attacks will recur, with great frequency; at first, slightly, but gradually getting worse, till at last, a severe bronchitis is established, resisting all means of treatment, and terminating in the patient's death. This has been the case in two very remarkable examples of this form of cancer of the lung which occurred in this country. If with these frequent attacks of bronchitis, we have evidence of cancer in any other situation, we may, in such a case, pronounce with considerable confidence, that the patient labours under cancer of the lung, presenting itself in isolated tubercles and equally distributed throughout the lung. We may safely anticipate, that the same principles of diagnosis which are applicable to acute tubercle, will be found to apply to this affection; and state that if, with the symptoms and signs of bronchitis we find the chest to become dull; if this dulness be extensive, yet incomplete, the stethoscope showing that the lung is still permeable, the solidity only occurring in points, we may make the

diagnosis either of acute tubercle or of this form of cancer; and as the symptoms of acute phthisis are generally strikingly marked, there would be probably no difficulty in determining on the nature of the affection.

I have already given the state of our knowledge of the second form, at the date of the publication of my work, 1837, in which I stated, that neither in the cancerous transformation of the lung nor the mediastinal tumour, could we apply any direct diagnosis, and that in a case seen for the first time, and in which no external cancer existed, there were no means by which we could determine the point. The following case, however, will show that our knowledge of this subject has advanced since that period. For the notes and details of this case I am indebted to Dr. Carroll, of Waterford, with whom I saw the patient in consultation with Doctors Mackesy and Conolly.

Encephaloid Degeneration of the Right Lung, in Combination with Empyema.

Mr. J., the subject of the following report, was about forty-four years of age; of middle height and robust frame; with a well formed chest; temperament neuro-bilious; eyes and hair dark. He had always enjoyed good health, with the exception of a tic doloureux in the gums which followed the extraction of a molar tooth.

June 17th, 1839. He returned from Dublin, complaining of uneasiness in the right hypochondrium; stools clay coloured; breathing hurried, particularly in the evening; took hydrarg. c. creta for a few days. The functions of the liver were restored.

July 9th. Difficulty of breathing having much increased, attended with cough, he applied a blister to the chest, and was bled to ℥ xiv.; blood very slightly buffed; breathing relieved. He at this time was going about his ordinary business; appetite and digestion good.

August 7th. I visited him for the first time; he expectorated

some bloody mucus for the first time, and was attacked with a severe lancinating pain in the right side of the chest, between the fourth and sixth ribs, shooting backwards to the scapula. Pulse 70 and regular; respiration twenty-six in a minute; tongue clean and moist; skin cool; bowels free; appetite good; unable to make a full inspiration in consequence of the severe pain which it produced. On inspecting the chest both sides were found perfectly symmetrical. On percussion the left side sounded well near the median line; the entire of the anterior and inferior portion of the right side sounded dull, as did the posterior and inferior on percussion; dulness rather greater behind. From a point corresponding to the *fifth rib upwards*, the sound on percussion was clear and good, respiration puerile in the left lung; in the upper part of the right side both before and behind, respiration was natural, from the nipple downwards, throughout the entire right side it was very feeble, but distinct, accompanied with a loud *sonorous* rale, more properly termed a *wheeze* giving the impression of a compressed condition of the bronchial tubes, no mucous or crepitating sounds. The sputa were very peculiar, such as I never saw before; they presented the appearance of black currant jelly, being not unlike it in consistence. They had none of the viscidity of pneumonic sputa, but gave the notion of pure mucus and pure blood mechanically blended. He lies chiefly on the back, being unable to lie with comfort on either side for some time. Ordered to be bled again, leeched and cupped, followed by a blister over the painful part; to take tartar emetic, six grains daily.

August 27th. Since last report the pain has continued without any relief, he has been bled, leeched, and cupped, repeatedly, and taken no less than twenty grains of tartar emetic every day; he cannot be induced to try mercury. Observed two large veins corresponding to the epigastric arteries ramifying on the abdomen; the superficial veins of the thorax manifestly enlarged. Pulse 112; respiration 30; dulness of the

right side, increasing in extent (upwards) and in degree; respiration in the same region nearly extinct; in the superior portion of the lung, it is becoming of a bronchial character.

August 28th. Dyspnœa greatly increased, coming on in violent paroxysms, threatening suffocation, obliged to be propped up in bed with pillows; at his own request, an accurate physical examination was made, when amid a great deal of uncertainty, from the anomalous nature of his symptoms, we arrived at the conclusion, that his disease was either a tumour of or in the lung, compressing it and so interfering with its functions, or an empyema the result of the pleuritis. The latter we adopted as most probable, and its peculiar symptoms subsequently increasing, we thought no more of a tumour.

Sept. 4th. Had a return of the tic.

Sept. 6th. Sputa altered; no longer bloody; has a sour smell like vinegar, so strong as to perfume the room; it is ropy and tenacious, and he expectorates about eight ounces of it daily.

Sept. 10th. Orthopnœa; confusion and giddiness of the head during the exacerbation of dyspnœa.

Sept. 15th. Expectoration increased.

Oct. 2nd. On examining the chest, found right side on measurement two inches larger than the left; slight œdema of the chest and of the face; legs considerably swollen; intercostal spaces not obliterated, though in less action than the other side; veins greatly enlarged, and two, corresponding to the internal mammary vessels, meet those on the abdomen; entire right side sounds dull; respiration absent over the entire side from the fourth rib down; it is bronchial above. Both before and behind great resonance of voice; pressure on the epigastrium causes an insufferable sense of suffocation.

Nov. 6th. Has been rather improving since last report; feels altogether more comfortable and can lie much better in the horizontal posture. On measurement both sides are found of equal girth; there is no displacement of the liver; intercostal

spaces more distinct; œdema of side and face gone; cough continues with the same expectoration.

November 7th. Visited by Dr. Stokes, who pronounced his opinion, that he laboured under malignant disease of the lung, together with an empyema, and that he could not recover. He, however, recommenced a perseverance in the use of mercury, which had been given, and subsequently the use of iodine, in the form of Lugol's Mineral Water, with the view of removing the empyema.

November 20th. The affected side is now found to be about half an inch less in circumference than the other; cough continues the same; pulse 112; respiration 30; appetite good; bowels regular; œdema of legs subsiding.

December 21st. No change.

During the months of January and February, there was a progressive decline of strength and flesh, notwithstanding that his appetite was good during that time; towards the last week or fortnight, he complained very much of oppression at the epigastrium, as if a heavy weight were there; the liver could be plainly distinguished; his legs swelled again, and face became œdematous. For three days before his death, he sat in a chair in the most distressing state of orthopnœa, with a pillow on his knees and his elbows leaning on the pillow; he had no pain at the struggle. There was no tumour or other mark of disease on his body."

I got a letter from Dr. Mackesy, of Waterford, respecting Mr. J. He says, "I regret to say that our friend, Mr. J., is extremely ill; the last harsh easterly winds have been very injurious to him, bringing on increased difficulty of breathing, cough, sputa tinged with blood, swelled legs, and before that, he was better than we could have expected, able to enjoy life in his drawing-room, and his spirits better than could have been supposed; the varicose veins over the thorax and epigastrium have extended in all directions. He is on no treatment at present; moderate support, and regulating the temperature of his apartment, is all we think of."

I did not see this patient again, but in the following March the account of the dissection was given in the following letter from Dr. C aroll:

"*Waterford, March 26th,* 1840.

"My dear Sir,—Poor J.'s protracted struggle is at length over; he died on Sunday night last, after suffering severely from dyspnœa and oppression at the chest and epigastrium. In two or three months after you saw him, very little alteration took place in his condition; but from that period his symptoms rapidly increased, until the final close.

"I opened his body thirty-three hours after death, in presence of several practitioners of this city, and I was greatly gratified to find *your diagnosis verified to the letter.* The following were the appearances observed:

"The body was much emaciated; the legs infiltrated with serum; the superficial veins which ramified on the surface of the thorax and abdomen, and which were enormously enlarged during life, had almost disappeared.

"On opening the thorax, a quantity of pure pus, amounting to about three pints, was found occupying a space in the right side of the chest, extending from the sixth rib to the diaphragm. The cavity in which it was contained was lined throughout by a very thick and smooth membrane.

"The lung compressed into the upper part of the chest was found intimately adherent to the parietes and all the surrounding parts; so much so, as to resist every attempt at separation with the fingers, and was only removed by the knife. On cutting into its substance it presented a very remarkable appearance, being converted throughout into a solid, heavy fibro-cartilaginous mass of brilliant white brain-like colour, interspersed with black spots, of the diameter of a sixpence each, contrasting singularly with the white portion.

"On close examination, this white substance was found to be fibrous in its texture, and radiated like (but not so distinctly) as scirrhus; and notwithstanding its extreme closeness and den-

sity, a white, creamy fluid exuded from the surface on incision. The black patches were of a soft, semi-fluid consistence, and it appeared doubtful whether they were melanotic deposits, which sometimes occur in conjunction with encephaloid tumours, or merely the remains of bronchial glands. I rather incline to the former opinion. There were some few traces of vascularity in some parts of the lung, and those confined to the apex, the lesser bronchial tubes were obliterated, while the larger ones in the upper and posterior part were dilated. There was no ulcerous cavity.

" In the left pleura, about a pint of clear serum was found. The lung at that side was free from adhesions, and presented a healthy appearance on the surface, and crepitated on pressure; it was, however, much compressed and pushed up by the diseased mass at the other side; a section of it exhibited a slightly whitish appearance, which, in all probability, was the commencement of a similar disorganization as that which existed in the right. There was some bronchitis. The pericardium contained about eight ounces of serum; the heart was perfectly healthy; the liver was sound, but somewhat enlarged, and projected about three inches below the cartilages of the ribs, and at the point of contact with them presented a very deep sulcus, such as you have described in your 'Observations on the Diagnosis of Empyema;' the remaining abdominal viscera were healthy. The brain not examined. Such was the issue of this very curious and interesting case, of which I have given you but a very meagre account; but should you think it advisable to have it published, I can furnish you with an outline of its history and progress. I have preserved a portion of the diseased lung, which I shall be happy to present to you if you should wish for it. I am, besides, anxious that you should examine it, as you may detect something that escaped our observation. I shall expect to hear from you as soon as convenient.

" Believe me, my dear Sir, very truly your's,

" William Carroll.

" *W. Stokes, Esq., M. D.*"

Some time after the receipt of this letter, Dr. Carroll transmitted to me a portion of the lung, which I exhibited at the Pathological Society, April 11, 1840. It was a solid and white mass, with scarcely a trace of vascularity, and presenting all the characters of the encephaloid degeneration.

As this case is the first, in which a direct diagnosis of cancerous degeneration of the lung was made, I shall offer some observations on the symptoms and the grounds of the diagnosis.

When I saw the patient he was sitting in an arm-chair, with his body bent forward, he had orthopnœa and œdema of the legs. The question had been agitated, as to whether paracentesis of the chest might be advisable. We found, however, *that both sides of the chest were of equal size, the right being covered with a network of large varicose veins, which could not be attributed to the pressure of the empyema, as they had been increasing since the return of the side to its ordinary dimensions.*

It was obvious, that even admitting the existence of a pleuritic effusion, some other disease must be present to account for the venous obstruction.

The side sounded completely dull in every portion, and in the upper part there was a total absence of respiration. The upper portion then of the lung was completely solid, and it was not unlikely that some remains of the empyema still existed inferiorly; but at this period the point could not be absolutely determined.

I may now enumerate the different points leading to the diagnosis of cancer in this instance.

1. The violent attack of pain in the side, the pulse remaining natural.

2. The peculiar currant jelly-like sputa.

3. The resistence of the symptoms and signs to treatment.

4. The continuance of symptoms of pulmonary distress, *after the sides had become symmetrical,* pointing out that some new disease of the substance of the lung had formed and was progressing.

5. The existence of the varicose veins, and their increasing *after the return of the side to its natural size.*

6. The total impermeability of the upper portion of the lung, and the complete absence of all signs of ulceration.

Of these, the three most important were, the obstinacy of the symptoms, the complete consolidation, and the varicose state of the veins.

On the subject of the pulsation of cancerous tumours I have nothing new to communicate, and beg to refer to my work on the Diseases of the Chest. It may be stated, however, that the pulsation is not a constant attendant on these tumours, and that, in my case and in that by Dr. Syms, the pulsation was obviously communicated to the tumour, as we so commonly see it in the abdomen. No mention of bruit de soufflet is made by Dr. Syms.

The disease of cancer of the lung may be a primary affection, or succeed to cancer of some of the external parts. We yet want facts to determine the comparative frequency of the two cases. Its most common form seems to be the degeneration of a portion of the lung into homogeneous encephaloid matter; and in that of isolated tubercles, which I think, if the patient lives long enough, may increase so as to form a vast mass of cancer, yet not quite homogeneous, but presenting a congeries of very large tumours, touching one another, and compressing the intervening lung. Such seems to be the case in the instance recorded by Dr. Houston, and also in that by Professor Law, at the Pathological Society of Dublin.

I will now give the general conclusions to which we have arrived, marking with an asterisk those which I already stated in my work on the Diseases of the Chest, and with two asterisks those which have been modified.

* I. That the facility of diagnosis mainly depends on the anatomical disposition of the disease.

** II. That we may divide the cases with a view to diagnosis into those in which isolated tubercles exist, with the intervening

tissues healthy; those in which simple degeneration occurs without ulceration, and with ulceration; and those in which a tumour of the mediastinum exists, causing compression.

III. That the diagnosis in the first case is difficult, from our being seldom able to avail ourselves of the signs of irritation and ulceration, so important in ordinary tubercles, and the fact of the equable distribution of the disease preventing comparison.

IV. That in some cases of isolated cancerous masses, the diagnosis may be founded on the same general principles as that of acute phthisis.

** V. That in simple cancerous degenerations of the lung, the principal physical signs are the gradual diminution of the vesicular murmur, without rale; its ultimate extinction; and the signs of perfect solidification.

VI. That the evidences of perfect solidification are better found in this disease than in any other pulmonary affection.

VII. That this form of the disease may exist, simply, or in combination with empyema, and may be secondary to cancerous tumours of the mediastinum.

VIII. That the sides may be symmetrical in this affection, and that either dilatation or contraction of the side may occur.

IX. That the mediastinum may be displaced, even though the side be contracted.

X. That under these circumstances we may have the signs of perfect solidification, accompanied by imperfect pectoriloquism, and increased vibration to the hand.

** XI. That the mediastinum may be displaced and the liver depressed without protrusion of the intercostal spaces.

XII. That the heart may be compressed and dislocated in this form of disease.—*Hughes, Syms, Houston.*

XIII. That the flattening of the upper part of the chest may occur from degeneration of the upper lobe.—*Hughes.*

** XIV. That the absence of signs of ulceration is very characteristic of this disease.

XV. That we have observed these signs in but a single case,

and that the phenomena, though they might be produced by other diseases causing the same physical conditions of the lung, have never before been met with.

That cancerous tumours of the mediastinum generally co-exist with either degeneration of the lung, or isolated tubercles in its substance.

That they may be solid or fluid.

That they may co-exist with cancerous infiltration of the lung, or the deposit of cancer in the bronchial tubes.

That they are to be recognized more by the signs of the tumour, than by those of disease of the lung.

** That dysphagia, tracheal stridor, feebleness of one pulse, difference of respiratory murmur from pressure on the bronchial tube, displacement of the diaphragm, and dilatation of the heart, may occur in this form of the disease.

** That a cancerous tumour may exhibit pulsation with or without bellows murmur, but that pulsation is not always attendant on it.

* That though the previous existence of external cancer may assist in diagnosis, yet that the disease may be all through internal, or the visceral precede the external cancer.

* That the feebleness of pulsation connected with the extent of dulness may assist in distinguishing the disease from aneurism.

That in the advanced periods, as in aneurism, gangrene of a portion of the lung may supervene.*

That the following symptoms are important as indicative of this disease : pain of a continued kind ; a varicose state of the veins in the neck, thorax, and abdomen ; œdema of one extre-

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* My friend Mr. Mac Donnell has shown, that from the anatomical disposition of the nutritive arteries of the lung, pressure upon any part of the main bronchus might cause the death of the lung. Of course, the liability to this is greater in the case of mediastinal tumours than in the simple degeneration. Dr. Greene has met with this gangrene, from the same physical causes, in aneurism. See the Transactions of the Pathological Society.

mity; rapid formation of external tumours of a cancerous character; expectoration similar in appearance to currant jelly; resistance of symptoms to ordinary treatment.

That though none of the physical signs of this disease are, separately considered, peculiar to it, yet *that their combinations and modes of succession* are not seen in any other affection of the lung.

ART. X.—*Some Cases of sudden Death from Hæmorrhage of the Lungs in Children.* By CATHCART LEES, M. B., Physician to the South Dublin Union Workhouse, and to the Institution for the Diseases of Children.

CASE I.—A delicate boy, æt. 6, of fair, lymphatic temperament, but not having any glandular swellings, had been labouring under tubercular phthisis for some time, when he was suddenly attacked on March 1st with profuse hæmoptysis, which subsided under treatment; he had no return till the 4th, when it recurred, and he expired while coughing up large clots of blood.

On opening the chest, the left lung lay collapsed against the spine, a large quantity of sero-sanguineous fluid, with many clots, nearly filled the cavity of the pleura; there was no appearance of lymph or of purulent matter in or on the pleura; at the upper and posterior part of the inferior lobe of the left lung, was a cavity (capable of containing a large nut) filled with coagulated blood; the parenchyma of the lung in the interior of the cavity was softened, irregular, of a dark colour, not lined by any membrane, nor were there any bands crossing it, but on passing a silver probe through the branch of the pulmonary artery leading towards the cavity, I found a large branch opening into the side of it by a wide aperture, with ragged edges, which had evidently furnished the hæmorrhage. The substance of the lung around the cavity appeared to be softened, of a dark olive colour, and gangrenous odour. A large bronchial tube opened into the

cavity, which with the trachea was filled with coagulated blood. The apex of this lung, and the entire of the opposite one, was studded with miliary tubercles; the bronchial glands were enlarged and softened.

Case II.—Bill Hall, æt. 3, a delicate child, dark hair and eyes, had been under my care for tubercular phthisis; he was attacked with profuse hæmoptysis nearly at the same time, and which ran a similar course to the former case, the hæmoptysis ceasing for a time, and recurring fatally on the third day.

A tubercular cavity sufficiently large to contain a pigeon's egg was found in the posterior part of the apex of the left lung, traversed by several branches of the pulmonary artery, one of which opened into the cavity, which had a distinct lining membrane, and contained a large coagulum. The pulmonary pleura in this part was thickened, and adhesion had taken place between the pleura. The lung was much enlarged as compared with the other, of a dense consistence, being completely occupied by tubercular deposition; the right lung was also studded with miliary tubercles; and the bronchial glands much enlarged. The stomach was distended with very dark blood and clots; the intestines pale; tubercular deposits in the liver; mesenteric glands enlarged, pale and cheesy; there were no glandular swellings in the neck.

Case III.—Fanny B——, æt. 9 months; a full child, but a very pale skin; dark hair; no glandular swellings. Was deserted at the gate of the institution eight months ago; had aphonia at that time, and never could cry, although it had no dyspnœa or croupy cough; but the aphonia continued up to its death, which occurred from an attack of profuse hæmoptysis.

The rima glottidis was nearly completely closed by a fibrinous deposition which occupied the chordæ vocales, both superior and inferior; and extended into the ventricle of the larynx. At the upper and posterior part of the inferior lobe of the left lung was found a large irregular cavity, the interior of which presented a granular appearance, and was not lined by any false

membrane; three or four branches of the pulmonary artery passed through it, one only was pervious, and had ruptured about the centre of the cavity. This lung was, as in the former case, much larger and more dense than the one of the right side, which was also occupied by tubercular deposition.

The above cases which have occurred within a short period, under the care of my colleague, Mr. Shannon, and myself, I have considered worthy of being recorded, not only from the fearful interest that must be always attached to sudden and profuse bleeding from the lungs, as well as from the rare occurrence of hæmoptysis occurring at so early an age, but also I think that every case of sudden death (particularly in children) which can be explained satisfactorily by the state of the organ after death, is of importance; and lastly, as even in the standard works on pathology, there are few, if any, accurate accounts of the bleeding vessel having been distinctly traced into the cavity. Thus, Laennec alludes to it in general terms as a very rare circumstance.

Dr. William Stokes, in his valuable work on the Chest, does not give any case of it, and the only observation bearing on the opening of the pulmonary artery into a cavity in the lungs, which occurs in his work, is the following:

"This cavity had extensive communication with the bronchial tubes, having placed it under water we found, by inserting a blowpipe into the pulmonary artery, that air in great quantity could be made to rise from the surface of the cavity."—p. 355, Article, Gangrene of the Lungs.

Louis, in his work on Phthisis, does not allude to it; and Dr. Watson, of London, who has paid particular attention to the subject of hæmorrhage, mentions in his Lectures that it is rarely the case.—*Vide Lond. Med. Gazette*, November 19th, 1841.

Dr. Hodgkin, in his valuable lectures on Pathology, thus expresses himself:

"I firmly believe, that with the exception of some rare

cases, in which the production of a tuberculous, or other cavity, may have been attended with the division of an open vessel, a case very inconsistent with the ordinary progress of such cavities (and except in the equally rare cases of wounded lung), it is probable that no one has ever been able to detect the orifice, or even the vessel from which the blood has escaped."—*Vide* vol. ii. part ii. p. 119.

At the Meeting of the Pathological Society, held on January 2nd, 1841, Sir H. Marsh exhibited a morbid specimen taken from a boy, who had died from hæmoptysis, in whom the ruptured vessel was demonstrated, but he stated at the time, that he considered it to be "*both rare and curious.*"

In the course of his observations, both in hospital and private practice, he had only witnessed two other instances of the same lesion. He stated, that he had seen many persons die of hæmoptysis, but he had met with only three cases in which the blood-vessels (from which the blood issued) had been discovered.

At the late Meetings of the Pathological Society I exhibited the specimens taken from the cases which I have detailed, and which had been carefully dissected for me, by my friend Surgeon Johnson, Demonstrator of Anatomy, who had accurately traced the branch from the pulmonary artery into the cavity, so that no doubt could be raised as to the true source of the hæmorrhage; and I also exhibited a specimen lent to me by Mr. Smith, in which he had traced a large branch of the pulmonary artery opening into a tubercular cavity.

The first case is particularly interesting, as affording an instance of what Bayle has designated as the phthisie ulcereuse ; thus, in Observation 30, he says :

" Ces cavites ne paraissaient tapissèes d'aucune membrane, on n'y apercerait pas meme cet enduit comme tomenteux, qui revet les cavités des tubercules non enhystés, lorsqu'ils ont été fondus par la suppuration."

It appears to me that gangrene had attacked the tubercular cavity, and a portion of the lung had given way, probably chiefly from mechanical causes, as there were no appearances of pleuritic inflammation having been set up in the adjacent parts, and nature had neglected her usual precautionary measures of obliterating the canal of the arteries to provide against hæmorrhage, the vessels remaining pervious, and yielding to the disorganizing ulceration.

The appearance of the blood in the stomach of the second case was very striking. I am not certain whether to attribute its very black colour solely to the chemical action of the gastric acid, or whether it may not be partly attributed to its being, as it were, pumped directly from the pulmonary artery into the stomach.

The last case presented some points of peculiar interest:

1st. The extreme youth of the infant.

2nd. The existence of vegetations of a peculiar character nearly closing the glottis, and yet not causing any stricture, dyspnœa, nor appearing to affect in any manner, except by causing aphonia.

3rd. The granular appearance of the cavity, not lined by any membrane.

4th. The hypertrophy of the lung in which the cavity had formed. This state (which also occurred in the second case) is, I believe, oftener met with in connexion with tubercular development, than is generally supposed, and if, on investigation, found to be the case in many instances, must make us qualify the proposition, that atrophy of the lung always attends the earlier stages of tubercle, and that a contraction of the chest must necessarily follow. Thus Bayle was evidently led into this error when he made the assertion, that the chest of *every* phthisical patient was found to be contracted.

ART. XI.—*Observations upon Congenital Luxation of the inferior Maxilla.* By ROBERT WILLIAM SMITH, A.M., M.R.I.A., L.R.C.S.I.; Lecturer upon Surgery at the Richmond Hospital School of Medicine; Surgeon to the Talbot Dispensary and Island Bridge Lunatic Asylum; one of the Secretaries of the Pathological Society of Dublin, &c.

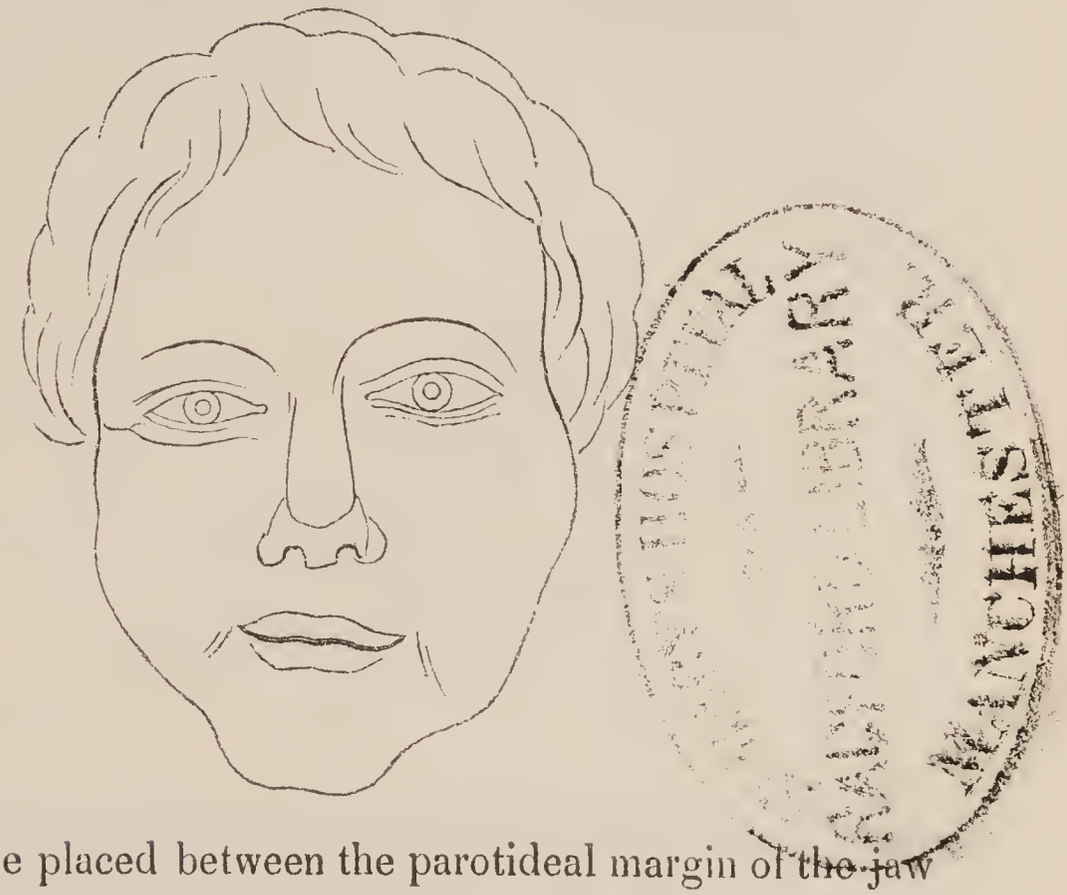
THE following singular example of deviation from the normal structure of the temporo-maxillary articulation, I deem not unworthy of a place in the records of pathological anatomy, inasmuch as it tends to complete the series of what have been termed congenital luxations. This condition, as occurring in the articulation of the lower jaw, has not hitherto been described, for the following brief notice by Guerin is the only allusion to this particular congenital luxation which I have been able to discover: "Luxation Complète de la Machoire dans les Fosses Zygomatiques. Je l'ai observée sur un fœtus dérencéphale que voici; la tension et le raccourcissement des muscles abaisseurs et des ptérygoïdiens externes contrastent avec l'allongement et l'amincissement des temporaux et des masséters."* I know of no other allusion to the deformity under consideration. The following case I am, therefore, desirous to record in the annals of pathological science, and shall confine myself at present to a description of the anatomical characters of the malformation, and a few observations upon its differential diagnosis:

In the month of April, 1840, Edward Lacy, æt. 38, an idiot from his infancy, was transferred from the Lunatic Asylum at Island Bridge to the Hardwicke Hospital, in consequence of an attack of bronchitis, complicated with diarrhœa. After the lapse of a short period, he so far recovered that he was removed into the convalescent ward of the hospital; but, upon the 2nd of May, he was again attacked with cough, followed by violent hæmoptysis, and expectorated a large quantity of blood, partly fluid, and in part coagulated. The hæmorrhage continued

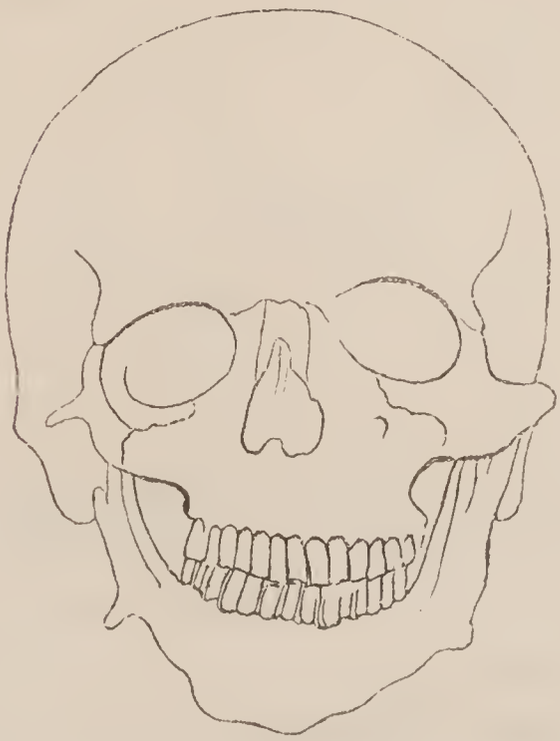
* Recherches sur les Luxations Congenitales, &c.—Paris, 1841.

during the 3rd and 4th, when his breath became extremely fœtid, and his strength was observed to be failing rapidly. The whole of the anterior part of the chest sounded dull upon percussion; he had constant cough with hæmoptysis, and extreme fœtor of the breath. It was concluded that he was labouring under gangrene of the pulmonary structure.—He died upon the night of the 5th, and upon the following morning, assisted by Mr. Gordon, the intelligent clinical clerk of the hospital, I made an examination of the body; it is, however, quite unnecessary to describe at length the morbid appearances which the lungs presented. The condition of these organs having no reference to the object of this memoir, suffice it to say, that there existed in the lower lobes of the right lung a gangrenous cavity, which contained several ounces of decomposed blood, and that the left lung presented similar appearances, although an equal extent of the pulmonary structure was not engaged in the morbid alterations; the brain was well formed, and the only morbid conditions noticed in the head were, opacity of the membranes and slight subarachnoid effusion, appearances very generally present in cases of idiotcy. Upon entering the room, my attention was at once attracted to a singular deformity of the countenance, of which the accompanying figure will give an accurate idea. The right and left sides of the face seemed as though they did not belong to the same individual, the left being in every respect larger and much more fully developed in all its parts; upon this side, the prominence of the malar bone and of the arch of the zygoma, the development of the masseter muscle and the fulness of the parotid space, all in a remarkable manner contrasted with the atrophy which had engaged the opposite half of the countenance, which, in the situation of the zygoma, presented a concavity in place of a convexity, and in the parotid space a very distinct and well-marked depression; the countenance was, moreover, crooked in almost every feature. Upon the right side, the angle of the mouth was higher than upon the left, while upon the left the orbit was placed a little

higher than upon the right side, the superciliary arch more projecting, and the eye more prominent. The right side of the face appeared, as it were, sunk in, and the extremity of the

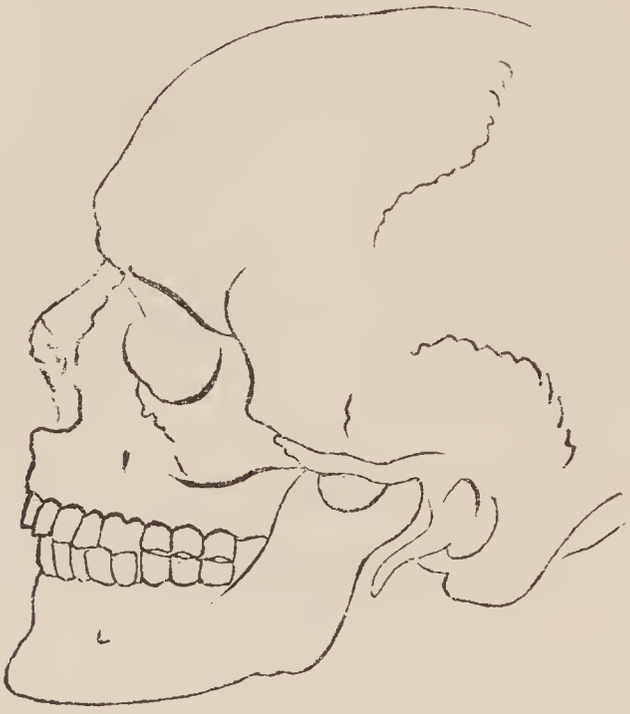


finger could be placed between the parotideal margin of the jaw and the front of the external auditory canal. Upon elevating



the integuments and contrasting the dissected muscles of either side, those of the right were found to be much smaller than their

fellows of the left side; the masseter, in particular, was atrophied both in length, breadth, and thickness; and the pterygoid and temporal muscles also appeared small, when compared with those of the opposite side; but as regarded colour and consis-



tence, the muscular fibre did not deviate from the normal condition, nor was there any appreciable difference between the

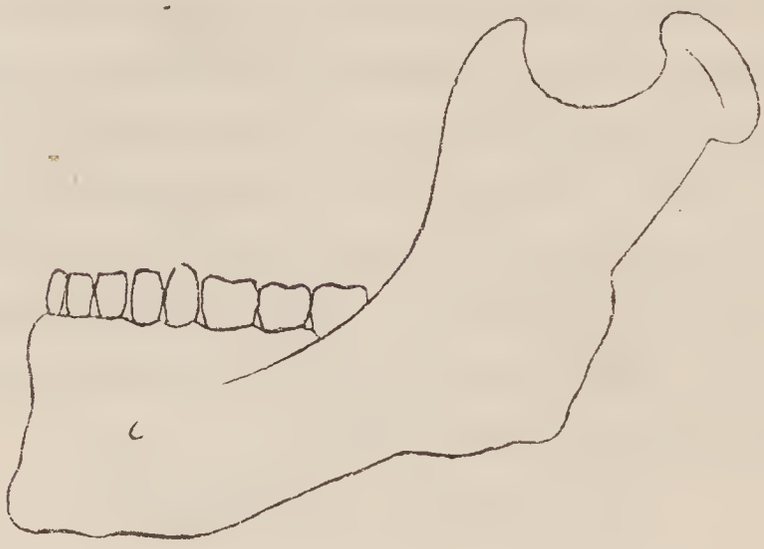
nerves of either side. The muscles having been removed, and the bones and ligaments exposed, the condition of the right temporo-maxillary articulation first attracted my observation.

When the mouth was closed and the teeth maintained in apposition, as exact as the abnormal state of the parts admitted of, the external lateral ligament of the lower jaw, instead of taking its natural direction downwards and backwards, was seen descending obliquely forward, to be fixed into an imperfectly developed condyle, which, in this position of the parts, was not in contact with the articulating portion of the temporal bone, but was separated from it by an interval of at least a quarter of an inch. There was no interarticular cartilage nor cartilage of incrustation, the osseous surfaces of the joint being invested by a thick periosteum alone; it was, however, in the skeleton of the cranium and face that the most interesting and remarkable appearances were noticed.

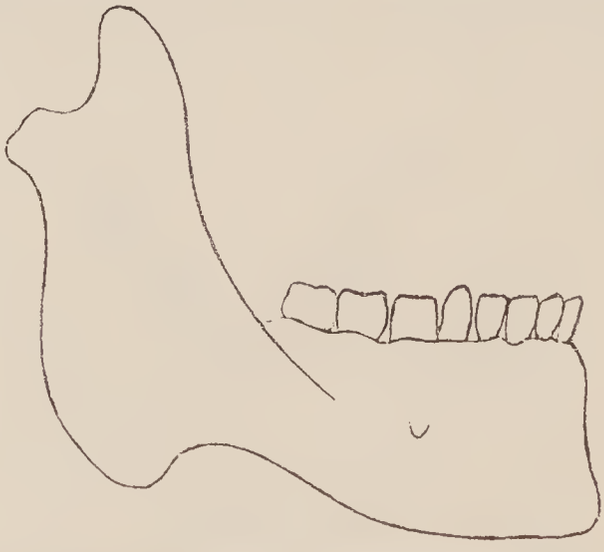
I. STATE OF THE LOWER JAW.

The right side of the inferior maxillary bone was considerably smaller than the left, the atrophy extending forwards as far as the mental foramen and affecting the bone as to its length, breadth, and thickness, the ramus being half an inch less in its transverse diameter, and its parotideal margin half an inch shorter than upon the opposite side; the lower margin of the bone presented a deep concavity at its posterior part, and the

angle was remarkably prominent and curved outwards; the parotideal margin thin, concave at its upper part, and forming nearly a right angle with the body of the bone, terminated above in a small curved process, directed nearly horizontally inwards and upwards, the upper surface being directed slightly



outwards and the lower slightly inwards. This process, which somewhat resembled in form the coracoid process of the scapula, was the only trace of a condyle and was destitute of cartilage;



the external pterygoid muscle was attached to its anterior and inner part, and the external lateral ligament to its outer surface; there was, in fact, a complete arrest of development in the condyle, and the sigmoid notch could scarcely be said to exist; the coronoid process was small and thin.

II. TEMPORAL BONE.

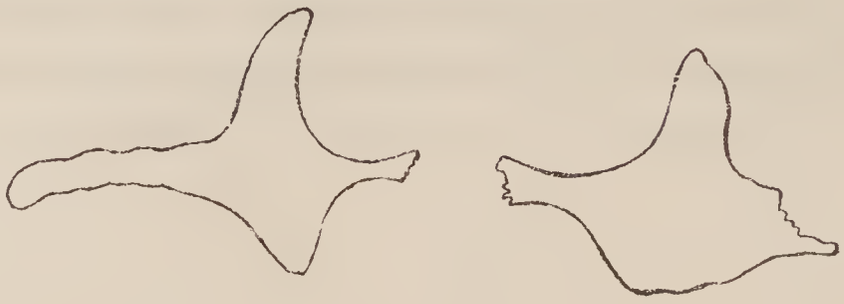
The deformity noticed in this bone consisted in an arrest of development of the zygomatic process, the superior longitudinal root existed, but the inferior transverse root, or articular

eminence, was not developed, there being in its place merely a flat surface destitute of cartilage; at the point where the two roots meet in the normal state, or, in other words, at the tubercle of the zygoma, the temporal was joined to the malar bone, the suture which connected them being distant only half an inch from the circumference of the external auditory canal, while upon the opposite side the interval was one inch and a half. The transverse root of the zygoma not being developed, there was, consequently, no glenoid cavity; its place was represented by a quadrilateral-shaped surface nearly flat, the inner part alone of which was concerned in the motion of the jaw, and here it presented a shallow sulcus, directed from before backwards, nearly parallel to the posterior part of the spheno-temporal suture, this sulcus formed a segment of a large circle, in which moved the curved and atrophied process, representing the condyle of the jaw.

III. MALAR BONE.

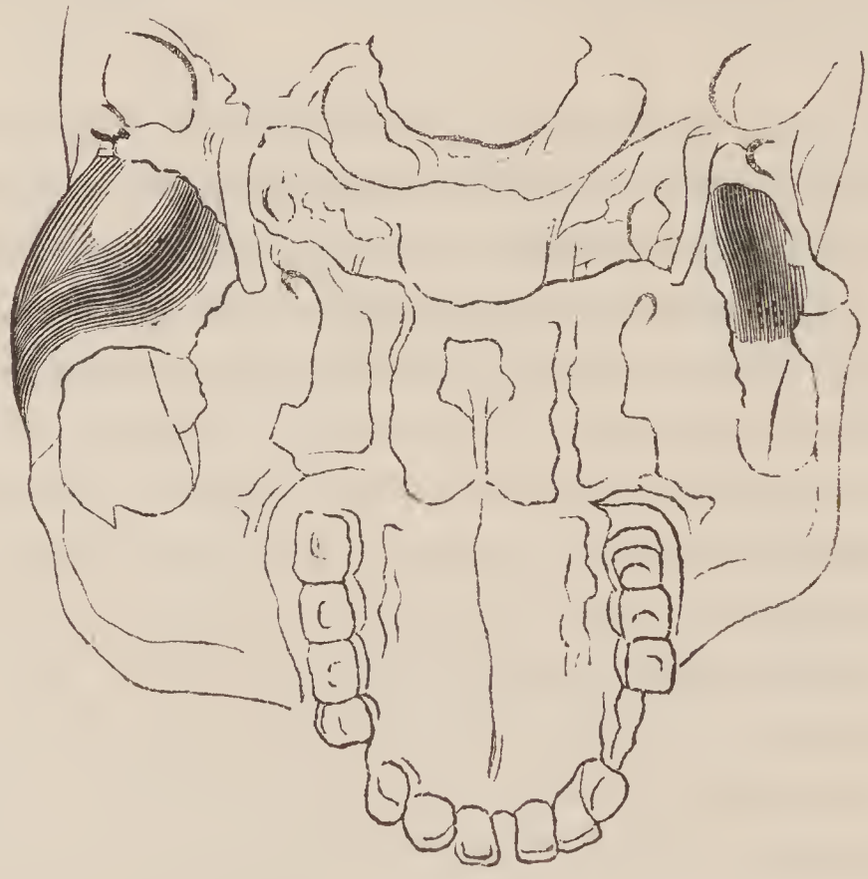
The malar bone, in size and shape, formed a very remarkable contrast with its fellow; it was small and thin, its facial surface was concave, and its zygomatic process of extraordinary length, it extended back as far as the tubercle of the zygoma, thus forming the entire of the zygomatic arch, which was con-

cave externally, and convex towards the zygomatic fossa, the reverse of what obtains in the normal state.



IV. SUPERIOR MAXILLARY BONE.

This bone also was much smaller than that of the opposite side, its alveolar border did not descend as low upon the right as upon the left side, nor did the suture by which it was united



to its fellow occupy the median line, so that the palate did not consist of two symmetrical portions, the suture being directed from before and from the right, backwards to the left side.

The motions of which the lower jaw were capable, were much more extensive than those which it enjoys in the normal state, especially lateral motion, or, more correctly speaking, a movement by which the right ramus was directed backwards and forwards, approximating the auditory canal and posterior surface of the malar bone alternately; while, upon the left side,

the condyle merely underwent a species of rotation upon its axis, and during life, the patient was constantly observed performing this motion, and the right side of the face was continually affected with spasmodic twitches. When the mouth was closed, the incisor and canine teeth of the upper projected beyond those of the lower jaw, and when opened all the striking features of the deformity were increased, and the crookedness of the mouth became particularly apparent.

Such were the results afforded by the post mortem examination of this interesting and remarkable example of congenital malformation; and I think that any person who attentively considers the appearances revealed by dissection, and illustrated by the accompanying wood-cuts, must draw the conclusion, that all the other deviations from the normal state of the bones were consequent upon the arrest of development in the transverse root of the zygoma, or articular eminence; it is, in fact, by the growth of this process that the glenoid cavity is formed; before its development there is no particular *cavity* for the condyle of the lower jaw, there is merely a surface, nearly plain, and which, I conceive, would readily admit of the occurrence of luxation, were it not for those peculiarities of conformation which characterize the inferior maxillary bone of the infant, and which render luxation, at this period of life, almost impossible; but according as the transverse root of the zygoma becomes developed, the glenoid cavity deepens in the same proportion, and an obstacle is thus opposed to the occurrence of luxation, an accident which the altered form of the lower jaw now favours in a manner which strikingly contrasts with the immunity from accident enjoyed by this articulation in early life.

In the case which I have detailed, the fœtal condition of the joint remained throughout adult life, there being neither glenoid cavity nor articular eminence, the zygomatic portion of the temporal bone was, in fact never formed, and hence the elongation of the zygomatic process of the malar bone, which, of itself, formed the entire of the zygomatic arch; and this circumstance is, in my mind, of itself sufficient to prove that the

abnormal state of the joint was a congenital malformation, and not the result either of disease or accident; for no accident or disease, with which I am acquainted, could have produced the deviation noticed in this case, from the normal position of the suture which joined the zygomatic process of the malar to the temporal bone; nor would it be difficult to demonstrate that all the other deviations from the normal state of the bones comprising the skeleton of the face, such as the absence of the condyle of the jaw, the atrophy of its ramus, of the superior maxillary and malar bone, and the altered form and position of the orbit, were consequent upon and to be referred to the original malformation of the glenoid portion of the temporo-maxillary articulation; in short, the case which I have detailed is so obviously one of congenital malformation, that I think it needless to offer any further observations upon this point. It differs remarkably from dislocation of the lower jaw, the result of accident; in the latter, the mouth remains open and cannot be closed, the lower projects beyond the upper jaw, a prominence is visible beneath the malar bone, formed by the coronoid process, and articulation is indistinct, the patient finding it impossible to pronounce labial consonants; in the former, the mouth can be freely opened or shut, the sphere of motion is even greater than natural, the upper projects beyond the lower jaw, the coronoid process forms no prominence, and speech is not affected.

This abnormal condition of the articulation of the jaw in the human subject, seems but to represent the normal state of the joint in some of the lower animals, and its resemblance to the form of the articulation in the rodentia will, I am sure, at once be apparent to the comparative anatomist. No analogous or similar malformation has been recorded; it is, therefore, a positive addition to our knowledge of congenital luxation, and an increase to the catalogue, already sufficiently extended, of original articular malformation co-existing with idiotcy. The cast, preparation, and drawings, illustrative of the deformity, are preserved in the museum of the Richmond Hospital.

BIBLIOGRAPHIC NOTICES.

Letter from Arthur Mitchell, M.D., *in Reply to the Review of the Elements of Materia Medica and Pharmacy.*

TO THE EDITORS OF THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

Gentlemen,

The March Number of the Dublin Journal of Medicine contains a review of the first part of the Elements of Materia Medica, by Dr. Bellingham, edited by me, and lately published, which demands some observations at my hands, and I trust to your candour for giving them insertion in your next Number.

The critique commences with some personal observations directed against Dr. Bellingham, in which the critic appears to have travelled out of his way to insult that gentleman. These I shall only notice by observing that they appear to have been (to say the least) dictated by *bad taste*.

The chemical portion of the Elements of Materia Medica is that which seems to have attracted the largest share of the critic's animadversions, and it is to it, consequently, that my observations will more particularly apply.

The critic says, "we give in the subjoined note a few examples of the blunders contained in the Elements of Materia Medica, by Dr. Bellingham, with their corrections." Now, I think I shall be able to prove, that many of "the blunders" which the critic has discovered in the work, are *blunders of his own;* and with respect to the rest, that in some instances he has put forward statements which are not altogether founded in fact, and in others that he has taken advantage of verbal errors, or made a passage to appear erroneous, by omitting the preceding or succeeding paragraphs which explained it.

These are grave charges, but they are no less true; and, in order to facilitate reference to them, I shall make a kind of classification of "the blunders" put forward in the review, quoting first each paragraph as given by the critic, with his ob-

servations on it side by side, and underneath the opinions of somewhat higher authorities upon chemical questions.

The first division includes "the blunders," in commenting upon which the critic has shown his ignorance of the subject which he attempts to criticize; "some examples of which, together with their corrections, are [to use his own words] subjoined:"

"'Protoxide of copper is a brownish black powder, which requires a very high temperature for fusion, is insoluble in water; soluble in ammonia, with which it forms a deep blue solution, and in most acids.'"—p. 62.	"Protoxide of copper is not soluble in water of ammonia."

The critic says protoxide of copper is not soluble in water of ammonia. We prefer the authority of Turner and of Rose:

"Protoxide of copper is *soluble* likewise in ammonia, forming with it a deep blue solution, a property by which protoxide of copper is distinguished from all other substances."—*Turner's Chemistry*, p. 575.

"Ammonia added in small quantity to solutions of protoxide of copper produces a greenish precipitate, which, however, *dissolves* very easily in an excess of the precipitant, and produces a *blue solution.*"—*Rose's Analytic Chemistry.*

"'Ammonia and carbonate of ammonia throw down white precipitates; a double salt of ammonia, and peroxide of mercury.'" —p. 70.	"There is not a particle of oxygen in the dried precipitate."

The critic asserts that there is not a particle of oxygen in the *dried* precipitate. Turner, however, states that there is:

"Ammonia and its carbonate cause a white precipitate, which is a double salt, consisting of one eq. of the acid, *one eq. of peroxide*, and one eq. of ammonia."—*Turner's Chem.* p. 586.

"'Gum is yielded only by *dicotyledonous plants.*'"—p. 92.	"Salep, a substance principally composed of gum, is obtained from Orchideous plants."

We thought every student of medicine knew that *salop* is a variety of *fecula*, but as the critic appears to be ignorant of the fact, we transcribe for his information a short extract from Dr. Thomas Thomson's Chemistry of Organic Bodies—"Salop is another variety of starch which comes to this country," &c. &c. —*Thomson's Organic Chem.* p. 651.

"'Emulsin is a peculiar principle which exists in sweet almonds in much greater abundance than in gluten.'"—p. 103.

"This does surpass our comprehension.'

We shall endeavour to enlighten the critic upon this point. If he refers to the "Organic Chemistry" of Dr. Thos. Thomson, published in 1838, page 1047, he will find the method of obtaining *emulsin* from *sweet almonds;* and at page 681 of the same work, he will find that this principle has been detected also in *gluten*, in which it exists in much smaller proportion than in sweet almonds.

"'Hydrate of soda, when exposed to the air, *effloresces;* hydrate of potash, under the same circumstances, *deliquesces.*'"—p. 39.

"Both hydrates deliquesce."

The critic says, "both hydrates deliquesce." We refer him to Brande's Chemistry, where he will find the following passage:—"Hydrated soda is distinguished from hydrated potassa by forming an *efflorescent paste* when exposed to the atmosphere; potassa, under the same circumstances, *deliquesces.*"—*Brande's Chemistry*, Ed. 1841.

"'Those composed of resin, volatile oil, and benzoic acid, are termed true balsams. The true balsams contained in the pharmacopœia are

Balsam of Peru.
Balsam of Tolu.
Benzoin.
Storax.'"

"The balsams of Peru and Tolu do not contain any benzoic acid."

The critic states that "the balsams of Peru and Tolu do not contain any benzoic acid." The following extracts give the amount of benzoic acid which has been obtained from these balsams:

"One variety of balsam of Peru consists of 88 per cent. of resin, 12 of *benzoic acid*, and a trace of volatile oil. The commercial variety is composed of 23 per cent. resin, 6.5 *benzoic acid*," &c. &c.—*Christison's Dispensatory*, p. 205.

"Two varieties of balsam of Peru occur in commerce, one is composed of 88 parts resin, and 12 *benzoic acid.* From 2 oz. of the other variety, Lichtenberg obtained about 60 grs. of *benzoic acid.*"—*Thomson's Organic Chemistry*, p. 516.

"Balsam of Tolu has not been analyzed with care, but is known to contain *free benzoic acid.*"—*Christison's Dispensatory*, p. 205.

"Balsam of Tolu, when distilled with water, yields very little volatile oil, but impregnates the water strongly with its taste and smell; *a quantity of benzoic acid* sublimes if the distillation be continued."—*Thomson's Organic Chemistry*, p. 520.

"'But one metal, arsenic, forms acids, and not an oxide, by its union with oxygen.'"—p. 75.

"Tellurium does the same."

Tellurium is not employed in medicine, therefore, even if the critic's assertion were correct, this metal would not necessarily have been alluded to, in an elementary work upon Materia Medica. The following paragraph from Turner's Chemistry is, however, to the purpose:

"Many metals which are not acidified by oxygen may be formed into oxides, whereas *one metal only*, *arsenic*, is capable of forming an acid, and not an oxide."—*Turner's Chem.* p. 418.

"'Sulphocyanic acid, and sulphocyanuret of potassium, produce a blood-red precipitate (with persalts of iron), and meconic acid, a wine-red precipitate.'"—p. 51.

"There are no precipitates whatever produced with these re-agents.

The critic states that there are no precipitates whatever produced with these re-agents; Brande, however differs from him.

"Some of the persalts of iron, especially the perchloride and persulphate, are rendered of a peculiar blood-red colour, and furnish a *red precipitate* when the solutions are concentrated upon the addition of sulphocyanic acid, and the soluble sulphocyanates; a very similar discoloration is effected by meconic acid and the soluble meconates."—*Brande's Chem.* p. 758.

"'When examined by the microscope, starch is found to be composed of rounded grains of variable form and dimension, each grain consisting of a membranous coat, enclosing a transparent colourless liquid.'"—p. 100.

"This description, originating with Raspail, has been long since proved to be erroneous by Guibourt. The grains consist of concentric layers, increasing in density towards the circumference."

The following extracts are sufficient proofs of the inaccuracy of the statement put forward by the critic:

"According to the late discoveries of Raspail, extended by the ulterior inquiries of various experimentalists (more especially of MM. Payen and Petroz) the globules of starch consist of two proximate principles, an *external tegument* termed amylin, and a *contained mucilage*, named amidin. When placed in boiling water their membranous teguments burst, and float through the water, while the contained mucilage is dissolved."—*Christison's Dispensatory*, p. 125.

"Thus it appears that starch consists essentially of two distinct substances, a *liquid portion* which fills each little vesicle, and the *vesicular portion* of the grain."—*Thomson's Org. Chem.* p. 652.

"'Oxygen combines, or may be made to combine, with every simple substance in nature.'"—p. 5.	"Except fluorine."

The critic, we presume, has insulated fluorine, and has determined its properties; as Turner says, page 243, "oxygen has a very powerful affinity for most simple substances, and there is *not one* of them with which it may not be made to combine;" and page 375 of the same work, "fluorine has only recently been obtained in an insulated form, and, therefore, its properties are but imperfectly known." Brande in the last edition of his work on Chemistry, says, "fluorine has not hitherto been obtained in an insulated form, for its powers of combination are such, that no body has been found capable of resisting its energetic action."

"'The crystallization of a saline solution is assisted by rest.'" p. 143.	"On the contrary, it is impeded."

The critic asserts that "the crystallization of a saline solution is impeded by rest." Turner, we presume, is rather a better authority, who says:

"Most bodies crystallize under favourable circumstances. The condition by which the process is *peculiarly favoured* is the slow and gradual change of a fluid into a solid, the arrangement of the particles being at the same time *undisturbed by motion*. This is exemplified during the slow cooling of a fused mass, or the spontaneous evaporation of a *saline solution*."—*Turner's Chem.* p. 635.

The second division includes "the blunders contained in the Elements of Materia Medica, in commenting on which the critic has in some instances shown his ignorance, and in others

taken advantage of verbal errors, &c. &c., "some examples of which [to use his own words] are subjoined:"

"We may remark," (the critic observes), "that scarcely is there a chemical equivalent in the whole book given correctly; thus, chloline is said to be 35·42 in place of 35·47; potassium 39·15, in place of 39·3; iron 28, instead of 27·18. Experimenters vary (he adds) as to the combining proportion of iodine; Berzelius makes it 126·567, Graham 126·57, Kane, 126·6; it is in this book stated to be 126.3."

The chemical equivalents of all the inorganic substances in the "Elements of Materia Medica," are identical with those contained in the *last edition* of Turner's Chemistry; and the chemical equivalents of the *four examples* cited by the critic are similar to those given by the same distinguished chemist, as shown in the following extracts:

"The chemical equivalent of chlorine is 35.42."—*Turner*, p. 333.

"Berzelius analyzed chloride of potassium by means of nitrate of oxide of silver, and inferred that 39·15 is the equivalent of potassium."—*Turner*, p. 433.

"The equivalent of iron has not yet been determined with accuracy. From the analysis of its oxides by Berzelius, Stromeyer, and Gay Lussac, it may be estimated at 27·16, 27·8, and 28·3. In the uncertainty as to which of these numbers is the most accurate, I shall continue to use 28, the number generally adopted in this country."—*Turner's Chemistry*, p. 487.

"Berzelius determined the equivalent of iodine by exposing fused iodide of silver to a current of chlorine gas, whereby the iodine was expelled, and chloride of silver generated. Through the known composition of chloride of silver he inferred that of the iodide, and thence found the equivalent of iodine. It is 126·3."—*Turner's Chemistry*, p. 358.

The critic next says,

"The chemical composition of organic substances is almost always wrong; in a list of thirteen alkaloids, whose composition is afforded, only one happens to be correct."

In the foregoing instances we have shown that the critic has made many "blunders," and we quoted passages from the highest authorities to prove it. In this instance he has fallen into the same error. The chemical composition of each organic substance will be found to be identical with that given in "Thomson's Vegetable Chemistry;" and in addition, *the list of thirteen alkaloids to which the critic alludes is actually stated to be a quotation from the same work.* Thus, at page 128 of "The Elements of Materia Medica," we find—

"The following table, given by Dr. Thomas Thomson, shows the composition of a number of vegetable alkalies, arranged according to the number of atoms of carbon which each contains;" and then follows the list of thirteen alkaloids, "only one of which (the critic asserts) happens to be correct:"

"'It (bromine) is about three times heavier than water, very volatile, boiling at about 116°, and affords a vapour similar in colour to peroxide of nitrogen.'"—p. 22.

"'Nitric acid oxidizes and dissolves it (mercury), with disengagement of peroxide of nitrogen.'"—p. 68.

"The second extract explains what is meant by peroxide of nitrogen in the first; and as the vapour of bromine is red, the reader is led to infer, that peroxide of nitrogen is red also. This gas, however, happens to be colourless."

Every tyro in chemistry knows that when peroxide of nitrogen comes in contact with atmospheric air, orange-red fumes appear (owing to the formation of nitrous acid), and as these fumes resemble the vapour of bromine in colour, the allusion was made as one likely to be familiar to the student. In Kane's Chemistry (which your critic also reviewed in the Dublin Journal), may be found the following passage:

"The detection of nitric acid is not difficult. . . . . The production of *red fumes* by nitric oxide, when it is brought in contact with a metal, is characteristic of it."—*Kane's Chemistry*, p. 456.

"'Chlorine can be procured by the decomposition of hydrochloric or muriatic acid (a compound of two equivalents chlorine, and two equivalents hydrogen), by means of the peroxide or black oxide of manganese, and a moderate heat.'"—p. 13.

"We had thought that hydrochloric acid was a compound of one equivalent of chlorine, and one of hydrogen."

In the process for procuring chlorine by the action of hydrochloric acid on peroxide of manganese (to which reference is made in the text), it is *necessary* to employ *two equivalents hydrochloric acid* to one of peroxide of manganese, as shown in the following diagram from Turner's Chemistry:

"Manganese	27·7 or 1 Eq.	Chlorine . . .	70·84 or 2 Eq.
Oxygen . . .	16 or 2 Eq.	Hydrogen . .	or 2 Eq.
Perox. of Mang.	43·7 or 1 Eq.	Hydroch. acid	72·84 or 2 Eq."

"'Ferrosesquicyanuret of potassium (red prussiate of potash) throws down a deep blue precipitate of Prussian blue.'"—p. 50.

"The precipitate is *Turnbull's blue.*"

Turnbull's blue is merely a variety of Prussian blue:

"The ferricyanide of potassium (red prussiate of potash) produces with a protosalt of iron ferricyanide of iron, *a beautiful variety of Prussian blue.*"—*Graham's Chemistry*, p. 990.

"The salts of the protoxide of iron give with the ferricyanide of potassium (red prussiate of potash) a precipitate which is at once of an intense blue, being *one of the varieties of Prussian blue.*"—*Graham's Chemistry*, p. 556.

"'Hence has arisen a division of acids into oxacids and hydracids. This classification is founded upon the assumption, that the oxygen and hydrogen are the two acidifying principles. Oxacids are composed of oxygen and an acidifiable base; and hydracids, of hydrogen and an acidifiable base.'"—p. 77.

"This obsolete classification has been long since exploded. There is no acidifiable principle that is not an alkalifiable principle."

The critic would lead the reader to infer from his extract, that the only division of acids contained in the Elements of Materia Medica, is that which he has quoted. If he had taken the trouble to read to the bottom of the page, he would have found the following:

"The acids have also been subdivided into the strong and the weak acids; inorganic and organic acids; animal, vegetable, mineral, and metallic acids; into acids with a simple radical, in which the base is an elementary substance, as the sulphuric, nitric, &c.; and into acids with a compound radical, where the base is a compound substance; thus cyanogen (a compound of carbon and nitrogen) is the base of hydrocyanic acid; the vegetable acids all come under this head."—*Elements of Materia Medica*, p. 77.

"'A salt is a definite compound of an acid and an alkaline, or salifiable base, in which the properties of each of these bodies are neutralized, and the resulting compound possesses neither the character of an acid, nor of an alkali, but chemical and other qualities distinct from either.'"—p. 82.

"Many salts possess acid, and others alkaline characters."

The critic in this instance also would lead the reader to infer, from the extract he has quoted, that there was an omission or a "blunder" here. But if he had read a little further, he would have found the following passage:

"The salts were formerly divided into neutral salts, super and sub-salts. A salt was said to be neutral when it did not affect vegetable colours; if it reddened vegetable blues, it was considered to be acidulous, and the prefix *super* or *bi* was used to indicate that it contained excess of acid; if the acid was in too small quantity to neutralize completely the base, it was believed to have excess of base, and was called a sub-salt. These terms, however, are rejected by modern chemists. A salt may have an acid reaction upon litmus paper, without any excess of acid; as the neutral proto and per-salts of iron, the neutral salts of the protoxide of copper," &c.—*Elements of Materia Medica*, p. 84.

"'Chlorine possesses the remarkable property of removing the colour of *organic substances*; and Sir H. Davy has proved, that this effect does not take place unless *water* is present. In its perfectly dry state chlorine produces no change upon dry vegetable colours, but when water is added it bleaches them, and is extensively employed in the arts for this purpose; its decolouring power, therefore, is not direct, but dependent upon its affinity for hydrogen, by which it decomposes the water, and combines with the hydrogen to form hydrochloric acid, while the nascent oxygen of the water produces the bleaching effect.'"—p. 17.

"Perhaps the most important character of chlorine, and certainly that upon which its value in the arts depends, is its power of removing the colour of organic substances; its bleaching properties. Formerly it was considered that water was necessary for this bleaching, and that the chlorine combined with the hydrogen, whilst the oxygen of the water being thus thrown upon the organic substance, oxidized it, and formed a new body, which was colourless. I have shown, however, that this is not the case, but that the chlorine entered into the constitution of the new substance formed, sometimes replacing hydrogen, at others simply combining with the coloured body," &c. —*Kane's Chemistry*, p. 493.

The following extract from Turner's Chemistry (which is, in fact, the class-book of the student in Dublin, London, and Edinburgh) corroborates the statement in the text:

"One of the most important properties of chlorine is its bleaching power. All animal and vegetable colours are speedily removed by chlorine. Davy proved that chlorine cannot bleach unless water is present; thus dry litmus paper suffers no change in dry chlorine, but when water is admitted the colour speedily

disappears. It is well known, also, that hydrochloric acid is always generated when chlorine bleaches. From these facts it is inferred that water is decomposed during the process; that its hydrogen unites with chlorine; and that decomposition of the colouring matter is occasioned by the oxygen which is liberated."—*Turner's Chemistry*, p. 332.

"'Maceration is an operation chiefly confined to vegetable substances, in which the soluble parts are partially or entirely dissolved by steeping them in a fluid at the ordinary temperature.'"—p. 136.

"'Digestion differs from maceration only in a gentle degree of heat (from 60° to 90°) being employed.'"—p. 137.

"The Dublin Pharmacopœia directs maceration to be performed between 60° and 90°, and digestion between 90° and 100°."

The Elements of Materia Medica, the object of the critic's censures, embraces the three pharmacopœias; we here give extracts from the works of Paris and Brande, in proof of the correctness of the statement in the text:

"Maceration is performed by steeping the vegetable substance in cold water," &c.—*Paris' Vegetable Chemistry.*

"Maceration is the steeping a body in a cold liquid."—*Brande Dict. of Materia Medica.*

"Digestion is similar to maceration, except that a gentle heat is employed to aid the solvent power of the fluid."—*Paris' Vegetable Chemistry.*

"'The inorganic kingdom includes minerals, fluids, and gases.'"—p. 1.

"'Owing to the sudden condensation of the two gases into a fluid.'"—p. 11.

"When *fluids* are mentioned in these examples, *liquids* are meant."

We presume that in a work upon Materia Medica, the term *fluid* might be employed as synonymous with that of *liquid*, without detracting much from the sense; and when the critic was obliged to have recourse to such shifts to collect a catalogue of "blunders," the presumption is, that he must have been sadly at a loss for *real errors*. However, if the critic takes the trouble of looking into the last edition of Turner's Chemistry, he will find that the terms *fluid* and *liquid* have been sometimes employed synonymously.

"Pure sulphuric acid is a dense, colourless, oily *fluid*."—*Turner's Chemistry*, p. 306.

"When bromine and phosphorus are brought into contact, &c., two compounds are generated; one a crystalline solid, the other a *fluid*."—*Turner's Chemistry*, p. 374.

"The condition by which the process of crystallization is peculiarly favoured, is the slow and gradual change of a *fluid* into a solid."—*Turner's Chemistry*, p. 635.

"'Hydrosulphuret of ammonia, and hydrosulphuric acid gas, produce dark brown or black precipitates of sulphuret of the protoxide'" (of copper).—p. 61.

"There is no such thing known as sulphuret of the protoxide of copper."

The critic has here at last certainly discovered a mistake; it arose in this way. The word "protoxide" was written in the manuscript instead of the word "metal," and in correcting the press the error was overlooked. That it was not a "blunder," as the critic would lead your readers to suppose, may be collected by referring to the characteristics of the other metals, where hydrosulphuric acid, and hydrosulphuret of ammonia are mentioned as reagents, viz. at pages 53, 55, 58, 60, 66, 69, &c.

"Speaking of water, 'its elasticity is considerable, and though very incompressible, it yields in a perceptible degree to pressure.'"—p. 12.

"This passage we shall leave without comment."

The critic says, "this passage we shall leave without comment," and I cannot help approving his discretion. There is, however, a verbal error here; instead of its elasticity is "*considerable*," it should have been printed, its elasticity is "*inconsiderable*," and if the critic had *completed the sentence*, he would have found what follows, "thus when exposed to a compressing force equal to 30,000lbs. on the square inch, 14 volumes are condensed into 13." The following extracts corroborate the assertion in the text:

"Water appears to possess elasticity."—*Paris' Vegetable Chemistry.*

"Water is elastic and compressible."—*Graham's Chemistry.*"

"Water is very incompressible."—*Turner's Chemistry.*

"Water is susceptible of compression."—*Brande's Chemistry.*

"'At the temperature of 32°, water is converted into a solid."—p. 13.

"Not when at rest."

This is so completely a quibble that it appears to be hardly worth noticing. Under ordinary circumstances, at the temperature of 32° water is converted into a solid, expands and crystallizes, as has been stated; and it was not to be expected that in an elementary work upon Materia Medica, the author should enter upon the experiments which go to prove that "a small quantity of water in a glass tube, may, by using certain precautions, be cooled below 32° without solidifying."

I have no wish to encroach too far upon your valuable space; the examples I have given are, I think, abundantly sufficient to prove, not only the unfairness of the critique, but the unfitness of the individual for the task of a reviewer. Yet I certainly should not have thought it necessary to notice his remarks even thus far, had they not appeared in so respectable a Journal as yours.

With respect to the critic's observations upon the botanical portion of the "Elements of Materia Medica," they are equally *fair*, *candid*, and *creditable* to him as those upon the chemical part. However, instead of taking up the time of your readers by giving examples, I will merely mention that since the publication of the work, the object of the critic's censures, Dr. Bellingham has been elected to fill the Professorship of Botany, recently founded by the Royal College of Surgeons in Ireland.

I am, Gentlemen,
Your obedient Servant,
ARTHUR MITCHELL.

HARCOURT-STREET, 4*th April*, 1842.

Clinical Researches on Auscultation of the Respiratory Organs, and on the First Stage of Phthisis Pulmonalis. By JULES FOURNET, Intern of the Hospitals, Paris, &c. Translated from the French by THOMAS BRADY, M.B., Fellow and Professor of Medical Jurisprudence in the King and Queen's College of Physicians, Ireland. Part I. London: Churchill. Dublin: Fannin and Company, 1841.

IT will propably save the time of some of our readers, if we state briefly the general objects of the work of M. Fournet before we examine the conclusions to which he has arrived, or pronounce any judgment as to the general character of the work in question.

M. Fournet congratulates himself that in the commencement of his career as an auscultator, he was placed sufficiently remote from the sphere of Laennec's activity to be affected by the

influence of that great master. In our simplicity we would have thought this a misfortune, but it is certain that great genius may sometimes despise external assistance, and flourish best in the soil and atmosphere it has created for itself.

In the beginning of 1835, our author discovered with astonishment that, instead of the single respiratory murmur described by Laennec, there were two murmurs, one of inspiration, the other of expiration, the latter being much weaker than the former. It is true, that Laennec had stated, that during inspiration and expiration, a slight but distinct murmur, answering to the entrance of the air into, and its expulsion from, the air cells of the lung could be perceived; but our author observes, that though Laennec's ear had heard both the sounds, his mind had noticed only one. He laments the mischievous influence which accompanied this opinion, and points out the circumstances that might have brought Laennec back to the right road, which were neglected. Years rolled on; Laennec continued a living obstacle to knowledge, but was fortunately removed; and the enfranchisement which resulted from his death permitted the world to receive and appreciate the discoveries of Fournet. This discovery was the murmur of expiration. But we are glad to find that in this new path to discovery, Fournet permits us to retain nearly all that Laennec has written. He says,

"All is accurate, or nearly all, if we apply it to inspiration; but it is at the same time evident, that the entire half of the demesne of auscultation is left uncultivated; perhaps we might even say more than half; for not only has one of the two sounds of respiration been altogether overlooked, but the natural relation between those two sounds, and every thing that depends on the disturbance of the relation, as well as on the disturbance of the expiration, has also been unnoticed."

A little further on he makes the following observation:

"Physiological accuracy then compels us to admit, that instead of the single sound to which Laennec has given the name of *respiratory murmur*, there exist two very distinct sounds; one stronger, belonging to the period of inspiration; the other weaker, produced during expiration. On the other hand, pathological observation confirms this division; for we see the weaker sound become, at times, the stronger, and *vice versâ;* lastly, the interests of diagnosis require it, for a number of valuable signs result from this mode of studying the sounds of respiration. Hence this auscultatory principle, *always to observe and analyze the inspiratory and expiratory murmurs separately; at the same time that by viewing them together, we appreciate the changes that may have occurred in their natural relation to each other.*"

We apprehend that in the present state of medical knowledge, M. Fournet will find but few to agree with him when he states that the neglect of the expiratory murmur on the part of Laennec, implies that he had explored *one half, or less than a half of the great field of auscultation.* Such an opinion carries its own refutation with it. The science of auscultation embraces many other points than the study of the vesicular murmur, and the assertion, that Laennec had left undiscovered one-half of the science, can only have weight with those who know nothing, or next to nothing of the subject. But while we admit, in justice to M. Fournet, that Laennec has not dwelt upon the expiratory murmur with the attention that it deserves, we altogether deny that he overlooked the phenomenon. Whatever M. Fournet's discoveries may be, that of the expiratory murmur is certainly not one of them. Let us in proof of this assertion appeal to the work of Laennec.

At page 29 of Dr. Forbes' translation, we read that

"During inspiration and expiration a slight, but extremely distinct, murmur, answering to the entrance of the air into, and its expulsion from the air cells of the lungs can be heard."

Again, he speaks in the same page, of causes which may prevent us from correctly appreciating, or even from hearing at all, the sound of inspiration and expiration. Again, page 31 :

"It appears as if in children we could distinctly hear the dilatation of all the air cells to their full extent, whilst in adults these seem as if, from their stiffness, they could bear only a partial dilatation.—This difference of sound is much less marked in inspiration than in expiration."

And where he speaks of cavernous, and of the blowing or puffing respiration, he dwells on the character of the expiratory sound. This is sufficient to show that Laennec was not ignorant of the expiratory sound, and will enable us to form a proper estimate of our author's candour, when in speaking of the expiratory murmur he says, that it had been heard and analyzed by several observers, as well in the normal as in the morbid state; at first, timidly, with doubt, with restrictions, for men dared not trust their ears where Laennec had heard nothing ! !

It is clear, then, that M. Fournet is not entitled to any credit for the discovery of the expiratory murmur, a phenomenon first noticed by Laennec, and well known and accurately described by Andral, Piorry, Louis, and others; yet if our author has shown that the morbid characters of the expiratory murmur furnish sources of diagnosis in disease, we must admit that he has made an important contribution to science.

M. Fournet, in describing the inspiratory and expiratory murmurs, states that the ratio in intensity and duration of the first to the second is as ten to two. We can understand the application of numbers to express the ratio of duration, but to determine with accuracy the ratio of intensity seems a difficult task.

"We can thus, he says, construct a scale of the alterations of these murmurs above and below the normal type, a scale of which each degree, marked by a number, corresponds to a certain degree of anatomical and physiological alteration of the organ. In this way we appreciate more accurately, more consecutively, the symptomatology; we distinguish more easily the degrees, the delicate shades of the same symptom, which may be in turn assigned to this or that disease; we follow in a more regular and more secure manner its increase or decrease; we avoid the phrases *a little more*, *a little less*, *much*, *moderately*, the limits of which vary with each observer, and lastly, we employ language which is equally easy to all the world; we derive from it, besides, this great advantage, that all observations made on this plan are exact and capable of being compared with each other."

This paragraph might furnish amusement, could we forget the importance of the subject.

We admit that in a very large proportion of cases the sound of expiration is audible, and this both in the normal and abnormal states of the lung. But there are many cases in which the expiratory sound is either altogether wanting, or so feeble as to be scarcely appreciated. Nor does it appear that the relation between the intensity and duration of either murmur is as constant as Fournet states. On this subject the following observations, made by a gentleman in whose accuracy we place the greatest confidence, are important:

First. In a case of arthritis the inspiratory murmur was longer than the expiratory, but the intensities were the same.

Second. In a case of sciatica the results were similar.

Third. Neuralgia—the length of the inspiratory and expiratory murmur the same, while the intensity or loudness of the first was greater than that of the second.

Fourth. Injury of the knee-joint; same result.

Fifth. Rheumatism; same results.

Sixth. Simple fever; ditto.

Seventh. Anascarca; ditto.

Eighth. Chronic rheumatism; ditto.

Ninth. Paralysis; ditto.

These cases presented no symptoms of disease of the lung, and the results are totally opposed to the statement of Fournet,

that the intensity and duration of the murmur always continue equal.—p. 28.

Again: in a case of dyspepsia, the characters of the inspiratory and expiratory murmurs were *in all respects* similar.

In one of rheumatism the duration of the two murmurs was the same, while the intensity of the first was greater than that of the second.

In a case of ascites, the duration of the inspiratory murmur was less than that of the expiratory, while its intensity was greater. The same result was observed in two patients convalescent from fever, in a case of hepatitis, and in one of cynanche tonsillaris. These examples might be greatly extended. In two cases of phthisis, the duration and intensity of the expiratory unquestionably predominated over that of the inspiratory, particularly in the left lung, and this is the only result which agrees with the statement of Fournet.

But as we have still to examine the author's observations on the diagnosis of phthisis, we shall refrain from further remarks on this point, further than to say, that the mutual relations of the intensity and duration of the inspiratory and expiratory murmurs have by no means that constancy which the statements of Fournet would lead us to expect.

(*To be continued.*)

Principles of Surgery. By James Syme, F. R. S. E. Third Edition, with Plates, 8vo. pp. 503. 1842.

It will, perhaps, be scarcely expected that we should review, *seriatim*, a book principally intended for the use of students, its chief merit rather consisting in presenting what is already known, in a clear and concise form, than in offering new views of the nature of disease, or new methods for its treatment. The work before us having reached a third edition shows, at least, that it has had the approbation of those for whom it was written, and very deservedly so, as Mr. Syme has contrived, in a style remarkably concise, and free from all affectation or obscurity, to convey as much information as the brief space necessarily allotted to each of the many subjects treated of, allowed him to do. We confess, however, we are not of those who consider that the student receives the best kind of instruction from books of this class. To read a system of surgery through, is of doubtful value, filling the head with faint impressions of many subjects, but with clear and strong ones of none. More knowledge is obtained, and what is still more important, more accurate

knowledge, when the desire to be informed on the nature of a new object or fact leads the student to apply to sources of instruction where the matter is treated of in the fullest and minutest manner. If, for instance, he sees for the first time a diseased knee, and anxious to know what causes the swelling and pain, and what will best remove them, he reads Sir Benjamin Brodie's Treatise on Diseases of the Joints, the ample information he there obtains is deeply impressed on his mind, and like all first impressions, is probably lasting, and, as such, it is better that the picture imprinted should be full and exact, than that it should be such a mere sketch of the disease as he would get in any short system of surgery, however good. There is much wisdom in the advice of the late great surgeon, Sir Astley Cooper, to his class, "it is better to read the detached works on particular diseases."

The following is Mr. Syme's description of what he calls Osseous Aneurism:

"*Osseous Aneurism.*

"There are various detached cases on record of tumours occurring in bones, and presenting several of the characters of aneurism. In 1826, M. Breschet published an essay on this disease; and, in the same year, without any knowledge of his views, I introduced the title of Osseous Aneurism into the Syllabus of my Lectures on Surgery.

"The tumour in question has been met with, out of all proportion, most frequently in the tibia, at its upper extremity. It has been observed also in the femur and scapula, and the wrist and ankle. The predisposition to it seems strongest in the male sex, and at the time of life between puberty and middle age. The enlargement is attended with severe pain from the commencement. It is at first equally firm and resisting with the other parts of the bone, but, on increasing, becomes more soft and yielding, not over the whole surface, but at some points of its extent, where an obscure pulsation or throbbing can generally be perceived. If other parts of the sac be subjected to pressure, they often give way with a crackling sort of sensation. As the disease increases, the limb affected becomes weak and œdematous, the superficial veins over the swelling are greatly enlarged, and the pain is extremely distressing. At last the sac gives way, and the profuse hemorrhage which ensues renders immediate amputation necessary. When the tumour is then examined, it is found to contain fluid and coagulated blood, to be hollowed out of the bone concerned, and to have for its cyst the periosteum, more or less strengthened with a lining crust of bone, not dense and compact, but possessing a honeycomb structure, the laminæ of which are directed towards the centre of the cavity. If the arteries of the limb be injected, it is found that their trunks are entire; but that their branches which enter the substance of the bone communicate so freely with the cavity of the

swelling, that the matter used for injection, however coarse, readily flows into it.

"The precise nature and origin of this disease have not yet been satisfactorily ascertained. The only effectual remedy for it is amputation. There is one case recorded, where ligature of the femoral artery proved sufficient to cure an aneurismal tumour of the tibia; but this must be regarded merely as an exception to the general rule. In amputating, it is always desirable to remove the whole of the bone in which the disease originated; since, though part of it may be apparently sound at the time, it tends to renew the morbid action."

Now, this, though a brief, is an excellent description of the disease, but we doubt whether Mr. Syme has any reason to be proud of having named it "Osseous Aneurism," as it does not offer any characteristic of aneurism except the pulsation. The disease, in truth, appears to be a morbid growth in the cancellated structure of the head of the tibia. A few years ago, a gentleman's leg was amputated, in this city, for a similar affection. The pulsation in the ham was so remarkable that there was considerable difference of opinion among some of our most eminent surgeons. It was agreed that an opening should be made in the tumour, and if it proved aneurism, that the artery should be tied above and below the sac, but if it proved a morbid growth, that amputation should be performed. On examination of the limb after removal, the head of the tibia was found occupied by a diseased mass the size of a large apple, partly within the bone, but the greater part projecting posteriorly beyond the bone; above, it was only separated from the joint by a thin layer of cartilage not thicker than paper, so that from the rapid growth of the tumour it would have soon penetrated the cavity of the joint. It was rather softer than cartilage, of a grey colour, and fibrous arrangement, with an irregular surface. In 1836, Mr. Porter, in the Meath Hospital, removed a leg for one of those pulsating tumours; it projected forwards at the tubercle of the tibia, pulsating like an aneurism, but having no bruit de soufflet, and where it was punctured a small fungus had shot forth. Examined after amputation, it presented a perfect picture of medullary sarcoma, the head of the tibia and also some of its surface beneath the periosteum being occupied by a soft mass exactly resembling the fœtal brain; the bone had been so softened that it had cracked across. Though the limb had been injected with great care, scarcely any of the injection had entered the substance of the tumour. The man made an imperfect recovery and left the hospital, an apparently similar tumour having formed on the thigh, two hands' breadth above the end of the stump. We have seen other instances of this pulsating tumour,

when it was composed of a substance transparent and like red currant jelly. Fungus hæmatodes occasionally pulsates in other situations, of which we lately saw a remarkable instance, in the neck, and where, in the earlier stages great difference of opinion existed as to its being aneurism or not, among some of the best surgeons in London. But why it should almost constantly pulsate in the ham is not easy to explain; it certainly is not from the impulse of the popliteal or posterior tibial arteries on its surface, as the pulsation is not a mere lifting up and down, but a true general expansion of the tumour separating the fingers of the hand which grasps it. Our experience, therefore, leads us to object to calling these pulsating tumours situated here "Osseous Aneurisms," as they are, in fact, malignant growths of the class of fungus hæmatodes, or medullary sarcoma. The work before us is illustrated with woodcuts and lithographic engravings, the first are good, the second among the very best we have ever seen.

For laying down the treatment of inflammation of the testicle, he omits to mention the use of pressure by means of straps of adhesive plaster, or adhesive and mercurial plasters mixed. This method, first recommended by Fricke of Hamburg, and afterwards brought into more general notice by Ricord, will be allowed, by those who have tried it, to be, with some restrictions, one of the most valuable means of cure we possess.

The following extract, though presenting nothing new, gives a fair specimen of the author's talent of conveying, in a short space, much useful knowledge. The passage would have been more perfect if Mr. Syme had mentioned the great value of the stethoscope in diagnosing the presence of foreign bodies in the bronchial tubes:

"Foreign bodies are very seldom admitted through the *rima glottidis;* but as the accident, when it does occur, is attended with very distressing and dangerous consequences, great care ought to be taken lest it be overlooked. When it is learned that the patient, while in his ordinary health, in performing the action of deglutition, or, if a child, in playing with some small foreign body in his mouth, was all at once seized with a violent cough, which has continued to recur in paroxysms with variable intervals, although no other symptom of local inflammation or constitutional disturbance can be perceived, the presumption will be strong that this accident has happened; and if the sensation of something moving in the trachea should also be felt, there can remain little room for doubting that a foreign substance has entered the air passage. It has occasionally happened that a violent cough proved the means of cure, by ejecting the foreign body through the glottis, but no reliance can be placed on this rare

chance; and the danger of continued irritation, suffocation from the inordinate secretion of mucus which is excited, or suppuration of the lungs, fully warrants immediate recourse to tracheotomy.

"When the operation is performed with this view, it should be conducted in the same way that has been described, with the exception, that, instead of a tube being introduced into the trachea, the edges of the opening must be held asunder by a couple of hooks, until the source of irritation is expelled by the forcible stream of air which it occasions.

"Should the bit of bone, pea, nut, or whatever may have entered, not appear at the orifice, a pair of curved forceps may be introduced upwards to search the larynx, and, if necessary, the cricoid cartilage should be divided to afford more room for this purpose. The forceps may also be directed downwards if there is reason to suspect that the foreign body is impacted in one of the bronchi, of which the right one, as being the larger, and more directly in the course of the trachea, will be more likely to contain it.

"In cases of urgency, either from the presence of a foreign body, or sudden swelling of the parts concerned, though the proper apparatus for performing the tracheotomy cannot be procured, the patient should not be permitted to die of suffocation. A pen-knife being thrust into the space between the thyroid and cricoid cartilages, as near as possible to the former, and carried down so as to divide the latter, will afford a free aperture, the edges of which may be kept apart by a thin bit of wood, or the expanded branches of a small pair of forceps."

We cannot conclude without saying a few words on the subject of excision of the joints. By his bold and skilful operations in this department of surgery, Mr. Syme has deservedly obtained much reputation, but we must offer our protest against the opinion which he expressed in his work on Excision of the Joints, and repeats here, viz., that the merit of reviving this operation, which had become obsolete, is peculiarly his own. Mr. Syme's first operation cannot be called excision of a joint, as it consisted in sawing off the head of the humerus, and removing some of the tip of the acromion, but the glenoid cavity was not touched. This was performed in 1826, and published soon after in the Edinburgh Medical and Surgical Journal. But complete excision of a joint, first performed by Mr. Park, of Liverpool, in 1781, was, after a lapse of more than forty years, first revived by Sir Philip Crampton, who, in the spring of 1823, operated three times—first, in the Royal Infirmary, Phœnix Park, where he removed the elbow joint from a soldier, and twice in the Meath Hospital, where the knee joints were removed. This was three years before Mr. Syme removed the head of the humerus, and it is not too much to suppose, consi-

dering the constant influx of Irish students into Edinburgh, during those three years, that these operations, which must have excited attention from their novelty, were well known there. Sir Philip Crampton's accounnt of his operations was published in 1827, in the Dublin Hospital Reports. It would have been supposed that Mr. Syme, in his work on Excision of the Joints, published in 1831, would have generously given the credit of the revival of this operation to him to whom it was really due, but we regret that the way he has alluded to the matter would rather tend to hide the real reviver and draw the merit to himself. Sir Philip (then Mr.) Crampton's name is mentioned in a cursory way along with Moreau's, as having removed more than the necessary quantity of bone, a criticism, bye the bye, which we are disposed to doubt; and again, as having performed excision of the knee joint. But let us see how the operation of excision of the elbow joint is disposed of. In page 64 of Mr. Syme's book of Excision of the Joints, he says:

"The proposal of cutting out the elbow joint has, accordingly, proved even still more unpopular than that of excision of the shoulder, and *until a few years ago*, the only instance on record of its actual performance were those related by Moreau."

Why is there no mention made of Sir Philip Crampton's name, except we are to suppose the delicate allusion implied by "a few years ago," is meant to apply to Sir Philip's excision of the elbow performed three years before Mr. Syme's first operation. And again, Mr. Syme says:

"During the present century, in which so much has been done towards the improvement of surgery, hardly any attention has been given to this subject; I am not aware, indeed, that the records of our profession contain even a single instance of the operation (that of excision of the elbow) being performed in *Great Britain*, previously to the cases which will be found below."

Why did not Mr. Syme say Great Britain *and Ireland?* Our readers will form their own judgments, but we think it would ill become us as Editors of an Irish Journal, did we not secure to our fellow-countryman his just rights. Sir Philip Crampton, we repeat, performed the operation three years before Mr. Syme, and his interesting paper in the fourth volume of theDublin Hospital Reports, drew general attention to the subjec, four years before the appearance of Mr. Syme's work. We cannot, therefore, see the justice or candour of the following extract rom the Principles of Surgery:

"Having adopted the practice (of excision of the joints), when

it was almost entirely neglected in this country—where, indeed, I am not aware of its having been ever previously performed on the living body—and employed it very extensively, as well as successfully, I feel great pleasure in contemplating the benefit that has been derived from its introduction into general use."

If by "this country," Mr. Syme means the United Kingdom, of course the statement is not correct; if he means "Scotland," we think it is making rather an unfair repeal of the union between the three countries. It is absurd to suppose, that an operation performed and published in England or Ireland can be unknown in Scotland, or *vice versa*. Though Sir Philip Crampton probably cares little about the matter, and could well spare from his abundance whatever honour attaches to the revival of excision of the joints, yet, as Irish Journalists, we feel bound to take the matter up.

A new Operation for the Cure of Amaurosis, impaired Vision and Shortsightedness, in a Letter addressed to Richard Farre, Esq., M. D., &c. By James L. Adams, F. L. S., G. S., Member of the College of Surgeons.

Such a title as the above naturally caught our attention; but, on perusing the pamphlet to which it is attached, we were exceedingly disappointed at finding that the author, in place of proposing a curative means for any of the known forms of amaurosis, has set up a new form for himself, which, as it has not hitherto been described by any author we know of, we shall state, without pretending to accede to opinions which, as yet, we do not esteem sufficiently proved.

These forms of amaurosis, to which Mr. Adams has given the name of *muscular amaurosis*,

"Are characterized, on the one hand, by a perfect transparency of the humours of the eye and a healthy condition of all its structures; on the other hand, by the absence of those signs which render the presence of permanent diseases or changes in the brain or optic nerve evident and certain. These are the uncomplicated forms. The complicated forms of this affection will only be detected by the most careful investigation of the past history, and by serious reflection on the present symptoms of the case; for, though certain change in the structures of the globe of the eye and of its transparent contents, may appear to the Surgeon to be sufficient to explain the cause o the loss of sight, still they may not always be sufficient in themselves completely to deprive the patient of the power of seeing, if th nerve itself be capable of its functions.

" Therefore the existence of this form of impaired vision, which I shall beg to call *muscular amaurosis*, must be sought for and detected by ascertaining the presence of several of certain symptoms, which, for the convenience of the Surgeon, may be classed into two kinds. *Objective*, where the changes in the actions and appearances of the eyes can be appreciated by the sight of the investigator; *subjective*, when peculiar sensations can only be perceived by the patient."

The *objective* symptoms, in the simple form of the disease, are stated to be few, either those which exist within the eye, or those which relate to its position or motions. Of the former, very little can be said, since they consist only of slight variations from the natural condition of the pupil; the iris may be more dilated and less active than natural, and the colour of the pupil may be somewhat less brilliant than usual, though not to that degree which is recognized as a turbidity of the humours. Of the latter, more may be observed; the position of one eye, and generally of the one most affected, may be slightly diverged, so as to constitute a peculiar stare, but not a squint; also, if the eye affected be closed, the affected one may become violently inverted, which will be increased by any effort on the part of the patient to strengthen it by looking directly forwards, though he may have perfect power to direct the eye to the outer canthus, if he will it; again, if both eyes be open and an object be held directly in front of the root of the nose, one eye may be apparently attracted towards the object or turned towards its inner canthus, while the other will be repelled or moved towards its external canthus, so that the patient may be found to have scarcely any power over the equal convergence of both eyes.

All these symptoms, or some of them, may be present to produce this disease; or it is not unfrequent to find them all entirely absent, and only the natural appearances of the eye present.

The *subjective* symptoms, as described in this pamphlet, admit of so much variety, that we do not find any nice distinction drawn, by which this form could be distinguished from many of the known forms of amaurosis; the one on which the greatest stress is laid, that of the eye becoming easily tired by occupation, and recovering again by rest, being common to many cases where the disease originates from pressure on the brain.

The general symptoms which may occur in a severe case of muscular amaurosis, are a sense of weight, occasionally amounting to severe pain, across the forehead; also, an aching and shooting sensation through the brows and temples; sometimes the sensation in the temples being compared to that of a violent

pressure, a general aching and throbbing of the eyes, and, in a few instances, a dull pain about the occiput, with a general headach, to which may be added, giddiness to that degree which will cause the patient to stagger or to fall. To these may be added, nausea and faintness, at times accompanied by sickness.

The cause of this disease, Mr. Adams states to be pressure exercised on the orbital portion of the optic nerves by contraction of the recti muscles, which may either directly press upon the nerve, or act indirectly by causing congestion of the choroid; and this may further be attributed to an affection of the third and sixth nerves, probably at or near their origins.

A number of cases are given detailing the mode of cure practised by Mr. Adams, namely, cutting the external rectus tendon, as in the operation for strabismus.

Muscular amaurosis is to be known by its negative symptoms, rather than any positive characters, viz., the absence of every other symptom but blindness to indicate a disease of the brain, also of every demonstrable change in the structure of the retina, and the presence of a voluntary power to increase the dimness of vision, by directing and fixing the eye steadily on any minute or bright object; to which may be added its sudden mode of attack, and its liability to a momentary and complete recovery of the sight, or change from eye to eye; therefore, precluding the idea that the disease can depend on alteration or destruction of the component parts of the optic nerve.

We do not feel disposed to give any opinion on this disease at present, but leave it to time and the profession to discover what may be its merit. We are heartily tired of the strabismus operations, and, from what we have seen of them, scruple not to say that, howsoever successful at the time of their performance, not one in ten remains cured after six months. This may sound startling after so much praise having been bestowed on this subject, yet we feel convinced that every truth-loving surgeon must accede to this opinion.

One other point in reference to the supposition that the recti muscles could exercise any injurious pressure on the optic nerve, and we have done. It is contrary to all physiology. We do not find it occurring in other parts of the body, where the nerves are far more exposed to pressure from the muscles than they possibly can be in the orbit, and it is, therefore, difficult to give assent to a supposed fact, when there is no analogy to frame our ideas from. Were this hiatus supplied, the probabilities of the existence of this disease, and the requisite curative treatment, would be much increased.

S. L. L. B.

Die Lehre von den Zeichen, Erscheinungen, und der Dauer der menschlichen Schwangershaft so wie von den Phänomenen einer überstandenen Geburt. Uebersetz von F. J. Schwann. Einleitend bevorwortet von Dr. H. F. Kilian, 8vo., Bonn, 1839.

An Exposition of the Signs and Symptoms of Pregnancy, &c. By Dr. W. F. Montgomery. Translated by F. T. Schwann, with an Introduction, &c., by Dr. H. F. Kilian: with one coloured plate, and one lithograph. 8vo. Bonn, 1839.

We beg to draw the attention of our readers to the translation of Professor Montgomery's book into German, edited by Professor Kilian, of Bonn, who has added an introduction, conveying, among other topics, the expression of the high value which is set on our distinguished countryman's labours in the field of obstetrical science. This, then, is the third foreign edition of the book, for two have been printed in America, and the opinions of the author have been adopted, and made the principal foundation of the several articles relative to pregnancy, delivery, &c., in the recent and more complete editions of Beck's Medical Jurisprudence, one of the most improved books on that important subject. The translation is by Schwann, of Godesberg, and embraces the whole work, viz., signs of pregnancy; signs of delivery; period of human gestation; and the amputation of the fœtal limbs in utero. The plates of the latter subject, and also those of the Corpus Luteum, are republished; those of the areola are omitted (as they say), because the description in the text is so clear and true to nature as to render them unnecessary, and their insertion would add too much to the expense of the work.

We wish we could enter at length into the examination of Professor Kilian's introduction, which contains some important subjects of inquiry, but our space does not permit it; we must, however, observe, that Dr. Kilian has entirely misapprehended the views of Dr. Collins as to the value of the evidences derived from auscultation in determining the question of the death of the fœtus in utero. If we understand Dr. Collins rightly, his opinion is, that the mere absence of the sounds of the fœtal heart, in a case seen for the first time, and in which they never had been heard, particularly by the observers then in charge of the case, would *not* be sufficient evidence of the death of the fœtus, but that the fact of the sounds ceasing, in a case where they had a short time before been plainly heard, and this under circumstances of unfavourable

labour, is important evidence that the child is dead: but that the life of the child does not necessarily prohibit the operation of craniotomy, nor the death of the child justify it.

After speaking of the labours of his predecessor, and the evidence gradually accumulated, the Professor remarks:

"But it is evident how much the certainty of our judgment must gain by such endeavours, although they may not all be of equal value; and it is no less apparent, that a new and accurate investigation of this additional evidence has become an imperative necessity. Accordingly, this work of Montgomery appears especially suited to the present time, and we thought to confer no unwelcome gift on the physicians of our native land, when we required Dr. Schwann, at present practical physician at Godesburgh, near Bonn, as one acquainted with the subject and the language, to take on himself the translation of the work into German."

And in conclusion he observes:

"Thus this work also, transplanted into the German soil, may serve to confute error, to confirm truth, and to stimulate to new investigations, so that by the earnest labours of every one striving after truth, our knowledge may be gradually completed."

SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

Session 1840-1841.

Fifteenth Meeting, March 13th, 1841.

Dr. O'Beirne in the Chair.

1. *Pneumonia.*—Dr. Corrigan said he was about to allude to a form of pneumonia, which was interesting from its assuming a bad and intractable character, and from its being accompanied with that state of vessels characterized as the state of passive congestion, the disease having no tendency to terminate in hepatization or suppuration. The lung when first seen after opening the thorax presents a dark blue colour; this appearance, however, is very evanescent; it fades away rapidly, and is almost completely lost in the course of three or four hours after the lung has been removed. The lung before him had lost its original hue, but when first removed from the body its colour was like that of a dark blue plum. The drawing, which he was about to exhibit, would convey a good idea of its appearance. It would be seen that the disease had engaged the lower lobe of each lung; in the left lung a small portion of the upper lobe was affected, in the right the disease was limited to the lower. Where a section of the substance of the lung had been made, the colour was somewhat like that of the lung in the vicinity of gangrenous spots. There were a few other points connected with the pathology of this disease to which it might be necessary to refer. In consequence of the obliteration of the smaller air tubes, the lung is firm, and when grasped in the hand feels like muscle; it does not, however, pass into the state of red or grey hepatization. From the closure of the smaller air tubes by the distention of the blood-vessels, the air is expelled, and the substance of the lung is firm and heavy, and sinks in water. In its want of crepitation, it differs from the first stage of ordinary pneumonia. In the feeling it communicates to the fingers, it resembles carnified lung, but it differs from carnified lung in retaining its original bulk. In carnified lung, the pressure of the effused fluid expels not only the air but also the blood, and there is consequently a considerable reduction in size, but in this

lung there is no reduction of size, because the absence of air is compensated for by a superabundance of blood. It is, in fact, a state of the lung in which the vessels are too weak, and too much distended to be capable of contracting. The case from which the specimen was taken was that of a lad, aged 14, who was admitted into the Hardwicke Hospital on the 6th of March, being at that time six days ill. The surface of his body was mottled as if from some eruptive disease, and he stated that his throat had been sore about a week before. His skin communicated that sensation of heat termed calor mordax; his pulse was 140; his respiration 60 in a minute, and chiefly effected by the diaphragm. He had cough, but said he was afraid to cough, owing to the pain it caused in his side. Both lungs, particularly the left, were dull on percussion over the lower part, and in this situation also there was some crepitus. On the 8th of March he was much worse. His pulse and respiration were still as quick as ever, his face was congested. He had sonorous and sibilous râles on the left side of the chest anteriorly, and on both sides posteriorly, and bronchial respiration as high as the spine of the scapula. He became hourly worse, and died about ten o'clock in the evening. The râle which was heard over various parts of the chest towards the base of the lung, was not the crepitus of ordinary pneumonia, but bore a much stronger resemblance to the mucous râle. With this there was dulness on both sides corresponding to the amount of disease, sonorous and sibilous râles (heard first on the second day after admission) and loud bronchial respiration. The peculiarity of the disease, however, was the mode in which it differed in its pathological characters from ordinary pneumonia, the peculiar colour of the lung when taken out of the thorax, and the resistance to treatment. These circumstances, if confirmed by future observations, would go to establish an idiopathic form of disease, characterized chiefly by an atonic state of the vessels, and in which the symptoms were not amenable to any of the usual modes of treatment.

2. *Syphilitic Disease of the Bones.*—Mr. Adams brought forward a case of old constitutional lues in which a great many tissues were engaged. The disease was originally phagedenic and the secondary eruption partook of the same character. The patient had several large ulcers on different parts of the body, particularly the thighs, and a number of crusts on various parts of the scalp. He came into hospital about a week before in a very low state, and died with symptoms of gastric fever, and was delirious for three days before death. He stated that he had been labouring under venereal for three years, that he had been employed as a policeman, and exposed to all the vicissitudes of the climate, that he had used mercury, indeed the impression on his mind was, that he had used too much of it, and that it was the chief cause of his symptoms. It was probable, too, (and the man did not deny it), that he had led an intemperate life. His liver at least presented the indurated and tuberculated appearance so frequently observed in drunkards. It was contracted and diminished in size, particularly the spigelian lobe, which was remark-

ably small, a circumstance very often observed in this form of disease. After death, Mr. Adams was anxious to ascertain the exact condition of the bones, and he trusted that the preparations he was about to lay before the Meeting would convey a good idea of the ordinary forms of syphilitic affections of the bones and their investments. He had brought most of the long bones with him, prepared by Mr. Smith, who had boiled some of them, injected others, and left some in the natural state. Any one who examined them, would perceive several good examples of syphilitic osteitis. In the interior of most these bones, the medullary canal was filled up with osseous matter, the rest of the bone where it happened to be injected, was extremely vascular. The pathological character of the disease appeared to be an acute osteitis accompanied by deposition of bony matter in the medullary canal, and in cells where it does not occur naturally. In some places, where the inflammation had proceeded further, the bone was softened, and a probe could be easily driven through it. The specimens presented also a very good example of what has been termed by Boyer, "exfoliation parcelleuse." Mr. Adams pointed out the appearances of the disease in the ulna, and showed a section of the radius, the central part of which was occupied with soft yellow matter. The external appearance of the bone was rough; internally it presented a new deposit in considerable quantity, and greatly increasing the weight of the bone. He thought that when the patient recovered after a deposition of this kind, the new matter became gradually converted into a substance somewhat like ivory. Mr. Adams concluded by observing, that he had brought forward the specimens as he did not know any good description of the state of the bones in syphilis, and therefore thought that some of the members might be anxious to see the disease as it really existed. (*Museum, Richmond Hospital.*)

3. *Cirrhosis of the Lung.*—Dr. Stokes exhibited a specimen of disease of the lung; it was an example of that form of disease, first described by Dr. Corrigan and termed by him cirrhosis of the lung, from the analogy which he conceived to exist between it and cirrhosis of the liver. It might be described as a disease, the general characters of which are a tendency to consolidation or contraction of the tissue of the lung, with dilatation of the bronchial tubes. In the 13th vol. of the Dublin Medical Journal, Dr. Corrigan first published his account of the disease, and brought forward many important facts and arguments bearing on the question of dilatation of the bronchial tubes. Previous to this essay, the opinion most generally received was that of Laennec, who attributed this state to constant cough and accumulation of mucus in the bronchial tubes. This opinion, however, is liable to objection, and Laennec's account of the causes to which dilatation is owing, is not sufficient to explain all the phenomena. Dr. Stokes here read a passage from Dr. Corrigan's paper, in which the opinions of Laennec are controverted. In speaking of the liver, Laennec thought that the disease resulted from a deposition of morbid substance in the liver, but those

masses which he looked upon as the product of disease have been found to be the natural secreting lobules of the organ. The primary seat of the disease is in the cellular web, which supports and surrounds the acini. Cirrhosis of the lung is a similar affection, and resembles cirrhosis of the liver in every respect, with the difference of organs. The lung has for its matrix an extensive web of cellular tissue, and this has a tendency to contract, so as to produce in the last stage of the disease, a very considerable obliteration of the air cells. Dr. Stokes proceeded to quote a passage from Dr. Corrigan's paper, explaining these changes, and observed that the difference between the views of Dr. Corrigan and Laennec, was that Laennec has recognized the condensed state of the lung, but looks upon it as the result of an affection of the bronchial tubes, while Dr. Corrigan thinks that the diminution of volume in the lung is the first step in the disease, and that this is followed by dilatation of the bronchial tubes. Dr. Stokes here detailed the symptoms of the disease as given by Dr. Corrigan, and observed that he had brought the case before the meeting, as he thought it would be interesting to many to have an opportunity of examining so well marked a specimen of the disease. The patient, a female about forty years of age, had been labouring for months under cough and symptoms of pulmonary derangement, the nature of which could not be satisfactorily ascertained. She was very low and weak when she came to hospital, and died two days after admission. Very little was known of her previous history, except that she had been labouring under cough with dyspnœa and hectic fever, and it was stated that two of her family had died of phthisis. The physical signs present were dulness of sound on percussion over the upper part of both lungs, but no decided or unequivocal signs of cavities. The appearance of the lungs on dissection was very characteristic. The left lung was greatly diminished in size, very irregular on its surface, so that when the hand was passed over it, numerous small bodies could be felt, conveying to the fingers the impression of tubercles existing on the surface of the organ; this phenomenon was, however, produced by air vesicles thrown out on the surface of the lung. Dr. Stokes observed, that, in the central portion of the left lung, there was a remarkable example of isolation of a portion of the pulmonary tissue, which appeared to be totally exempt from the disease. It would appear that the left lung had suffered most from the contractile process, but the right was also engaged. The surface of both was very remarkable, and the first impression of any one who passed his finger over it, would be that the lung contained tubercles. On making a longitudinal section of the trachea and primary divisions of the bronchi, the right bronchus immediately after it branched off from the trachea, became greatly dilated, so as to exceed the latter in diameter, while the left bronchus was evidently contracted and reduced below its ordinary calibre, but dilated again a little farther down. Dr. Stokes exhibited several of the dilated bronchi, and observed that many of

them appeared to terminate in culs-de-sac, and could not be traced beyond a certain distance in the indurated tissue of the lung. With respect to the physical diagnosis, all he could say was, that the case had been most carefully examined by one of the most distinguished stethoscopic students at the Meath Hospital, and he stated that he could not find the usual symptoms of phthisis, although a cursory examination would lead any one to conclude that the woman was actually labouring under tubercular consumption. The length of time, at least, during which the woman remained ill, without any signs of a cavity or of ulceration of the lung, would have led to doubts as to the existence of phthisis, and these would have been further strengthened by a knowledge of the fact, that the woman never had suffered from hæmoptysis. Taking these and other circumstances into consideration, Dr. Stokes thought that in many cases of the kind it would be possible to make the diagnosis between cirrhosis of the lung and phthisis.

4. *Anchylosis of the Shoulder Joint.*—Mr. Smith presented a series of specimens, illustrative of anchylosis of the shoulder joint. One of these, a recent specimen, was taken from the body of an individual ninety years of age; for many years before his death he had been bedridden. The external appearances resembled somewhat those of luxation of the head of the humerus into the axilla, the acromion process being prominent, and the joint in the region of the deltoid completely flattened; the arm was rotated inwards, the glenoid cavity and the head of the humerus formed one continuous bone; the greater tubercle was anchylosed by bone to the acromion process, while the coracoid process was similarly joined to the lesser tubercle. In some of the specimens exhibited the union between the opposed surfaces had been the result of scrofulous caries of the bones composing the articulation; but in some the process of anchylosis had taken place under unusual circumstances, there being no external sign of inflammation, no increase of heat about the joint, no formation of matter, the patients only complaining of an occasional sense of uneasiness in the joint, and a very gradual impairment of its motions; the latter, however, slowly but steadily increasing, until at length the functions of the joint are totally destroyed, the process of bony anchylosis being completed. Mr. Smith observed, that the specimens were possessed of additional interest as showing the alteration which the muscular fibre undergoes from disuse. In the cases under consideration, the muscles had undergone the process of fatty degeneration. Some pathologists had denied the fatty degeneration of muscular tissue, but without just grounds. Mr. Smith here exhibited the subscapularis taken from one of the joints already shown, and said that the same condition could be recognized in the supra and infra-spinatus of the same joint. This fatty degeneration was produced by two causes, one local, the other constitutional; the first arising chiefly from disuse, the second from a diseased condition of the blood. (*Museum, Richmond Hospital*).

5. *Congenital Atrophy of the Right cerebral Hemisphere, with Contraction of the upper Extremity, upon the opposite Side.*—Mr. Smith presented a very remarkable specimen of congenital atrophy of one of the hemispheres of the brain. It was not more than one-half the size of its fellow; its lateral ventricle was dilated and filled with serum. The subject of the case was a lunatic. The right side of the cranium was much thicker than the left, and the groove for the middle meningeal artery remarkably deep. The hypertrophy of the bones would appear to be consequent upon the original deficiency of the brain; sometimes the osseous walls of the cranium preserve their natural thickness, but thin plates of bone are formed in the membranes of the brain; of which Mr. Smith, upon a former occasion, exhibited a remarkable example. In the case now detailed by Mr. Smith, the anterior region of the frontal bone upon the right side was three-fourths of an inch in thickness, without diploe and almost as dense as ivory; and upon this side the frontal sinus was of enormous dimensions, and separated the roof of the orbit from the floor of the anterior fossa of the skull by an interval nearly one inch and a half in vertical diameter. The spinous process was joined to the pterygoid process of the sphenoid bone. Mr. Smith next showed the contracted hand of the same individual, and said that it was this circumstance which led him to predict the deficiency or atrophy of the opposite hemisphere of the brain before the patient's death, and referred to his former communication upon this subject.* Mr. Smith, in conclusion, drew attention to a fracture of the clavicle, taken from the body of the same individual. It was situated between the conoid and trapezoid ligaments, and was not attended by any overlapping of the fragments. There was a remarkable process of bone descending from the under surface of the clavicle at the seat of fracture. (*Museum, Richmond Hospital.*)

Sixteenth Meeting, March 20, 1841.

Dr. Law in the Chair.

1. *Cancrum Oris—Pneumonia.*—Dr. Lee said, he believed it was well known to most of the Members, that the tendency to a fatal termination, so frequently observed in infantile diseases, depended in many instances on complications. To illustrate this, he would beg leave to exhibit a specimen. The viscera before him were taken from the body of a child who had come under his observation about six weeks ago, being at that time affected with infantile remittent fever. The child was about two years of age, and suffered greatly from diarrhœa and superficial ulceration of the gums. The latter began to heal after some time, but the former continued and ran into the chronic mucous form of the disease. About the 10th of March, a slightly swollen and reddish spot appeared on the right

* See Dublin Journal, vol. xvii. pp. 341, 523.

cheek, shining and somewhat tense, but not painful. In the cavity of the mouth a brown slough was seen, between the last molar tooth and the cheek. On the next day, the whole cheek was swollen, the eyelid œdematous, and the character of the disease apparent. The usual treatment for cancrum oris was adopted; the disease, however, resisted every thing, and the child died on the 18th of March. The tongue seemed to have escaped the disease, except at one point, where it was in contact with the slough. Dr. Lees observed, that in this affection the complications were extremely interesting. He would beg leave to direct the attention of the Meeting for a moment to the state of the lung before him. The child had short, dry cough, but no other remarkable symptom of pulmonary disease; but, on examining the left lung, the lower lobe was found to be solidified. There were also a few tubercles scattered through it; the intestines were very vascular, particularly the rectum, the lower part of which was covered with lymph, and presented some traces of ulceration. Dr. Lees exhibited, also, the large intestine of a child nine months old, who, after having suffered from diarrhœa for a few weeks, was attacked with cerebral symptoms, and died two days previously. On dissection, the large intestine was found to be thickened and dotted over with small superficial ulcerations, the whole of the intestinal coats being in a state of hypertrophy and high vascularity. Dr. Lees said, he was inclined to think that this was the first stage of the disease observed in the former specimen. The pneumonia, however, was the chief complication. A modern French writer, M. Taupin, has given twenty-eight cases of the complication of cancrum oris with pneumonia; and it is curious that measles, a disease in which pneumonia is so frequent a complication, stands at the head of the exanthemata, as being most frequently followed by cancrum oris.

2. *Phthisis—Emphysema.*—Dr. Corrigan said, the case he was about to detail was one of unfrequent occurrence; he alluded to the complication of emphysema with phthisis. He would detain the Meeting for a few minutes, while he gave the post mortem examination and a few notes of the case. The appearance of the specimen was altered from being too long kept, but enough remained to show the extent to which the disease had proceeded. Both lungs were emphysematous and of enormous size, notwithstanding the collapse which follows death, and presented a very remarkable appearance when the chest was first opened. Dr. Corrigan observed, that the only portion of the lung which seemed healthy, was what he held in his hand, and at this point it would be easy to perceive the line of demarcation between the healthy and emphysematous portions of the lung; this corresponded to the infrascapular region on the right side. Another feature in the case was the existence of subpleural vesicles of very large size and in considerable number. In the top of each lung there was an old tubercular cavity of large size. One of these cavities had healed, at least as to its internal surface, the lining membrane being continuous with the membrane of the bronchial tubes in the upper lobe, so that no line of separation could be seen between

them. The cavity in the other lung was nearly of the same size and somewhat similarly circumstanced. It was in the apex of the lung, the remainder of which was quite emphysematous. The only portion of the lung which appeared sound was the posterior part of the right lung, extending from the angle of the scapula downwards. Dr. Corrigan said, he would now proceed to give a short account of the symptoms. The patient was a man, about thirty-three years of age, who had followed the occupation of a groom. He was admitted into the Whitworth Hospital on the 1st of March, complaining of cough, with copious expectoration and night sweats, the latter symptom, according to his account, having made its appearance almost from the commencement of the disease. He stated that he had lost but little flesh until a short time before he came to hospital, but from that to the date of his death (March 16th) emaciation proceeded rapidly. His pulse was about 80 and soft, and he could lie only on the left side. The physical signs present were as follows: no difference could be observed on percussion over either side; there was a loud muco-crepitating rale over the anterior part of the left lung, extending to the right side, and occupying both lungs, with the exception of the infrascapular portion of the right, which gave puerile respiration, a system which continued up to the time of his death. The last report of the state of the physical signs was this: Mucous and crepitating rale over the whole of the anterior portion of the chest, over the whole posterior surface of the left side, puerile respiration over the infrascapular region of the right. With respect to the patient's habit of lying on the left side only, it was to be observed, that the only portion of the lung which remained healthy was that part of the right lung already described extending downwards from the angle of the scapula; to permit the freest motion to this portion of the lung, he was obliged to lie on his left side. Owing to the extent of the emphysema, the phenomena of a cavity were masked, and although Dr. Corrigan suspected that it was a case of emphysema combined with tubercular cavity, he did not venture to give a positive opinion. The case presented, in a very remarkable manner, some of the symptoms of emphysema which have been so accurately described by Dr. Stokes, and among the rest, the everted and puffed lip, the dilated nostril, and the characteristic shape of the chest. The signs of a cavity, however, were masked. This was explained by dissection, which showed that it was not a ragged cavity distended with fluid, but one covered with a smooth lining membrane, continuous with the bronchial membrane, and therefore more liable to be taken for a dilated bronchus; it was, in fact, a cavity which seemed to have undergone a process of cure. It was also seated in the very apex of the lung, a part which cannot be well reached by the auscultator, and was surrounded on all sides by a mass of emphysematous lung, which is a bad conductor of sound. It is a well-known fact, that compound media of different densities are bad conductors of sound, as shown by a very simple experiment. Every one is acquainted with the sound of tracheal respiration, and how loud and intense

it is heard when the end of the stethoscope is applied over the hollow of the neck. But if the experimenter takes a sponge, and having squeezed all the water out of it, places it between the hollow of the neck and the end of the stethoscope, the sound of tracheal respiration is quite lost. The sponge here represents the emphysematous lung, and, like it, consists of its own tissue and the air contained in it, two very different media. But if the cells of the sponge are filled with a dense medium like its own substance, as for instance with water, it becomes again a good conductor of sound, and the tracheal respiration can be distinctly heard. Now, as the sound of tracheal repiration is lost through the squeezed sponge, so is that of cavernous respiration or pectoriloquy through the emphysematous lung. There were one or two points more deserving of attention. Most of the members would recollect the signs which had been given by Laennec as indicating the presence of subpleural vesicles. Dr. Stokes has stated that he is inclined to doubt the accuracy of these signs, and thinks that the sound of friction is never heard except where there is pleuritis. In confirmation of this view, Dr. Corrigan stated that in his case the subpleural vesicles were in considerable numbers and of a very large size, varying from a hazelnut up to a walnut, and yet there was no frottement whatever.

3. *Compound Fracture of the Cranium, with Laceration of the Brain.*—Mr. Adams said, he wished to communicate the results of a case of injury of the head. The case itself was of short duration, the man having died forty-six hours after the receipt of the injury, but there were some points connected with it worthy of notice. The manner in which the accident happened was remarkable. The man, who was engaged in a distillery, got entangled in the rope of a cylinder belonging to a steam-engine of twenty-horse power, was dragged up with great force, and had his head jammed in between the cylinder and the ceiling, by which the bones were crushed in a frightful manner. On admission, he was bleeding from both ears; the scalp was detached to a considerable extent, the skull bare, and the bones fractured. The symptoms of collapse had lasted for a considerable time, and when they disappeared, were followed by hæmorrhage from the ears. The temporal muscle and arteries were lacerated. When he recovered from the state of collapse, he complained of pain in his chest, and said he had been injured in that part. His intelligence remained perfect to the last, although the bone at one point was depressed to the extent of nearly half an inch. On the night before his death, he spoke rationally, asked for what he wanted, and appeared to be quite collected. He died the following morning (Saturday), at a quarter to five o'clock. The post mortem examination was obtained with great difficulty, and could not be finished, owing to the refusal of the friends of the deceased. The parietal and temporal bones were those most injured, being broken into six fragments, some of which were considerably depressed. Mr. Adams said he had noticed this fact a second time, because the depression of the bones did not seem to interfere with the functions of the

brain, the man remaining quite intelligent until death. The fracture of the temporal bone traversed the petrous portion and opened the internal ear. On examining the interior of the parietal bone, the middle meningeal artery was found to be torn near the inferior angle of the bone. There was a considerable extravasation of blood at this spot. There was also a perforation in the dura mater large enough to permit the finger to pass through, and beneath this the substance of the brain was torn. There was, in fact, compound fracture of the skull, with depression of the bone to the extent of nearly half an inch, laceration of the dura mater, and injury of the substance of the brain, but no lesion of intelligence. Another circumstance worthy of note was, that the dura mater was detached from the inside of the cranium to a greater extent than that of the fracture. Indeed it not unfrequently happens that an injury of the head will be followed by detachment of the dura mater and effusion of blood, although there is no fracture. Mr. Wallace, late of Jervis-street Hospital, made some experiments on the dead subject, and found that when the dura mater was detached by two or three smart blows, and the subject then injected, a considerable quantity of the injection escaped into the cavity thus formed between the dura mater and the skull.

4. *Rupture of the Left Ventricle of the Heart.*—Dr. Bigger said the heart he was about to exhibit was taken from the body of a gentleman, aged thirty-one, who had spent a considerable time in the West Indies. He would beg leave to mention a few particulars of the case, as it appeared to him to possess much interest in many points of view. In 1835, the patient complained of a train of symptoms, which Dr. Bigger considered to be those of incipient phthisis. Some time afterwards he saw him in consultation with the late Dr. J. Crampton, who, taking the same view of the case, advised him to travel. In addition to the symptoms of phthisis there was an extraordinary peculiarity in this case which Dr. Bigger had never seen before, except in one instance, namely, that at times this gentleman's pulse would fall from fifty down to seventeen beats in a minute, and remain in this state for eight or ten hours. With these exceptions he seemed to enjoy tolerable health, and his appetite was very good. Dr. Bigger met him again at Malta in 1837. He then appeared to be labouring under phthisis in the advanced stage, and had symptoms of cavities in both lungs. Being a person of very susceptible disposition, the hopelessness of his condition preyed upon his mind and brought on frequent fits of despondency; it was chiefly during these fits that his pulse fell in the manner before described. There was one symptom which attracted Dr. Bigger's attention, and for which he could not give any explanation. While this gentleman's heart was pulsating at the slowest rate, a soft gentle bruit de soufflet was heard after the first sound; this disappeared when the heart's action became accelerated and returned to the normal standard. This symptom occurred at an early period of the disease, and was remarked by Dr. Crampton. The only parallel instance which had come under

Dr. Bigger's observation, was in the case of a patient at the Whitworth Hospital, named Malone, whose pulse used to fall at times down to sixteen, and never rose higher than forty. But in this case the man was eighty years of age, while the subject of the case under consideration was a man in the prime of life. In both, however, there was this remarkable sinking of the heart's action, and in both there was a quickened state of respiration. In Malone's case the breathing was quicker, by ten respirations in a minute, than that of a person in ordinary health; and in the case of this gentleman, it was quickened by any slight exertion, even that of speaking. Malone died, chiefly from exhaustion, and on examining the heart, no disease could be discovered, except a firm coagulum in the left ventricle, extending into the aorta, which, from its structure and appearance, seemed to have been there for a long time. There were also circular masses of fibrine between the carneæ columnæ of the ventricles. Dr. Bigger said he had exhibited the heart at a former meeting as a specimen of purulent cysts in the heart, and Mr. Ferrall had shown another of the same description. He was now inclined to think that this was not a correct view of the case, and that these bodies were only masses of fibrine. Dr. Bigger here removed a large mass of extremely tough, solid fibrine from behind some of the carneæ columnæ of the specimen he held in his hand, and made an incision into it, to show that in most of the coagula there was a distinct hollow in the centre, giving the appearance of a cyst. The gentleman from whom this specimen was taken returned to this country last August, presenting still all the physical signs of tubercular cavities, and suffering from cough, but in other respects tolerably well, and in a better state of mind and body. He began, however, some time afterwards to get worse, and suffered from œdema of the lower extremities and emaciation. On the 2nd of the present month (March) Dr. Bigger was called to see him at twelve o'clock at night. He found him in great distress, kneeling by the side of his bed, on which his arm rested, and gasping for breath. He was conveyed into bed with difficulty, and lived only five hours. On opening his chest the lungs were found to contain a large quantity of tubercles, both in the upper and lower part, and towards the apex of each lung there was a tubercular cavity. When the pericardium was opened it was found to be full of fluid blood, and on examination Dr. Bigger found a ragged aperture in the left ventricle, through which a portion of lymph projected from the interior of the left ventricle. It was evident that this portion of lymph must have been forced through the opening during the first rush of blood. On following this into the ventricle Dr. Bigger found a long coagulum, which had partly passed through the opening in the walls of the ventricle. On removing the coagulum Dr. Bigger discovered at this spot some appearances which seemed to be the result of ulceration. There was a breaking down, and a discoloration of the fibre. Dr. Bigger observed in conclusion, that a consideration of the peculiari-

ties of this case led him to think, that the fibrinous coagula must have existed in the heart for some time before death.

5. *Injuries of the Ankle Joint.*—Mr. Smith presented a series of preparations and casts, illustrating the changes which the parts undergo, in cases of unreduced luxation and fracture engaging the ankle joint, and the efforts made by nature to render the articulation as secure as its abnormal state admits of.

I. *Fracture of the lower End of the Fibula, with partial Luxation of the Tibia inwards—Pott's Luxation.*—In this specimen the fracture traversed the fibula very obliquely, commencing at least three inches and a half above the lower extremity of the bone, passing downwards and inwards, and terminating at the junction of the fibula with the tibia. The lower end of the fibula was increased in size, and of greater density than natural; the two bones of the leg were united to each other by true anchylosis for an inch and a half above the ankle joint; both malleoli were enlarged and elongated, the outer descending so as to touch the os calcis, while the extremity of the inner was nearly on a level with the inferior margin of the navicular bone; it was curved outwards, and must have afforded considerable support to the inner side of the foot; it was connected to the astragalus and os calcis by strong fibrous and ligamentous structures; the mortise-shaped cavity formed by the united lower extremities of the tibia and fibula was of a quadrilateral form, larger than natural, and extremely deep, particularly in its outer half, where it received the external part of the upper surface of the astragalus, which surface was directed obliquely upwards and inwards, and grooved by a deep sulcus in the line of flexion; this sulcus received the inner edge of the deep cavity already mentioned, as lodging the outer portion of the upper surface of the astragalus. In this case, the means adopted by nature to secure the articulation, seem to have been the increase in the vertical extent of the malleoli, especially the internal, and the firm union by bone of the fibula to the tibia. (*Museum, Richmond Hospital*).

II. *Oblique Fracture of the Tibia, extending into the Ankle Joint, with Luxation outwards of the Tibia and Fibula.*—In this preparation, which was an example of an injury the reverse of the former and of much more rare occurrence, a fracture traversed the tibia obliquely from above downwards and outwards; it passed into the ankle joint, splitting the articular surface of the tibia into two nearly equal portions; the outer portion (which was continuous with the shaft) and the fibula were displaced outwards, the inner fragment, with the foot, being thrown inwards; the foot was also rotated on its long axis; the outer edge resting on the ground, the dorsum being directed outwards, and the sole of the foot turned so completely inwards, as to be parallel with the inner surface of the tibia; the external ankle formed a very remarkable projection; a vertical line prolonged from its point would fall an inch external to the outer edge of the foot; the interval between the inner and outer ankle was much wider than natural; the external malleolus was hypertrophied, increased in length, curved inwards, and intimately united to the tibia

and astragalus; the tibia was also perfectly anchylosed to the astragalus; the motions of the ankle joint were, therefore, in this instance totally destroyed, to compensate for which, a greater degree of motion than natural seemed to exist in the articulation between the astragalus and os naviculare. (*Museum, Richmond Hospital*).

III. *Fracture of the Tibia, at the Junction of the middle with the lower Third of the Bone; oblique Fracture immediately above the Ankle Joint, with Luxation of the Foot inwards.*—For the opportunity of exhibiting this most remarkable specimen, Mr. Smith said, he was indebted to Dr. Cusack. The limb had sustained a twofold injury; the tibia, at the junction of the middle with the inferior third, had been broken very obliquely, the line of fracture passing from the fibular side of the limb downwards and inwards; there was much overlapping of the fragments, the inferior one being drawn upwards and outwards, the fibula, however, remaining unbroken; in the site of this fracture, the interosseous space was obliterated, the fibula being united by bone to both fragments of the tibia; at a short distance above the ankle, a second fracture passed through the tibia obliquely from above, downwards and outwards, detaching the internal malleolus and a portion of the shaft of the bone. This injury was of more recent date than that first described; the bones of the leg were thrown outwards, the peronæal malleolus forming a most remarkable prominence; the foot, thrown inwards and rotated upon its long axis, presented its outer edge to the ground, the plantar region looking directly inwards; the fifth metatarsal bone, upon which, as also upon the outer part of the os calcis, the patient walked, was more than double its natural size; its external, which in the altered position of the foot, had become its inferior margin, was perfectly flat and exceedingly rough, and singular to say, instead of articulating merely with the anterior surface of the cuboid bone, it was joined to the whole of the external margin of the latter by an osseous prolongation, which passed backwards, even as far as the os calcis; thus, though the man walked upon the outer edge of the foot, the outer part of the os calcis, and the fifth metatarsal bone were the parts of the skeleton of the foot to which the weight of the body was ultimately transmitted. In the neighbourhood of the internal malleolus, there had sprung up osseous growths of the most singular and fantastic forms, in which were left fissures, foramina, and canals, which transmitted to the foot the tendons of the tibialis posticus and flexor muscles. Two of these remarkable osseous growths were nearly an inch in length and were met by others somewhat similar, which had shot up from the upper and inner surfaces of the calcaneum, and thus was completed a bony arch, through which passed the posterior tibial vessels and nerve, and the tendons of the flexor communis and flexor pollicis; that of the tibialis posticus passing through a distinct foramen. These osseous vegetations, which formed an almost perfect bond of union between the hypertrophied internal malleolus and the os calcis, must have given powerful support to the inner side of the strangely deformed articulation of the ankle, and opposed the ten-

dency of the foot to further displacement inwards. With respect to the ankle joint itself, the articular surface of the tibia, rough and destitute of cartilage, was increased by the addition of osseous matter to its circumference to nearly double its natural size, both in its transverse and antero-posterior diameter; the upper surface of the astragalus was sloped off with great obliquity from its outer to its inner margin, and formed along with the bony growths from the inside of the os calcis, one large articular surface, directed outwards and a little upwards; the external surface of the astragalus was turned downwards and outwards; the peronæal malleolus much enlarged was anchylosed to the tibia; the integuments which invested the external edge of the foot were of a horny consistence, while the skin covering the sole of the foot had become smooth, fine, and thin; a large bursa occupied the region of the outer ankle. (*Museum, Park-street School*).

Seventeenth Meeting, March 27th, 1841.

Mr. Carmichael in the Chair.

1. *Ulceration of the Cæcum and Colon.*—Dr. Kirkpatrick presented specimens of ulceration of the cœcum and the colon, followed by perforation and acute peritonitis. The patient, who had come under his care about two months ago, complained at that time of vomiting, constantly recurring about five o'clock in the evening, and lasting during the early part of the night. During these attacks he stated that he threw up large quantities of fluid like barm, amounting nearly to three pints a day. In other respects he made no complaint, and had no symptoms except those referred to the stomach. Various remedies were tried, but without any effect. He then began to exhibit the usual signs of phthisis, and ultimately had symptoms of acute peritonitis, under which he died. On examination, in addition to abscess of the lung, there was extensive disease of the cœcum and colon; the latter exhibited a small perforation, around which there were evident marks of peritoneal inflammation; but no portion of the contents of the intestine had escaped into the cavity of the abdomen. The ulceration of the cœcum extended to the ilio-cœcal valve, but had not destroyed it.

2. *Tubercular Meningitis.*—Dr. Lees said, he wished to exhibit a very interesting specimen of cerebral disease in a child. The patient, a delicate girl, about eleven years of age, came under his care on the 5th of March. At the time of his visit he found her lying in bed, with a drowsy look and complaining of intense headach, and he was informed by the nurse, that she had been attacked with vomiting of greenish fluid during the night, and had raved a good deal. Her face was pale, her pulse about 100, her pupils dilated. Next night she raved a great deal and sighed frequently; the vomiting had ceased, but the cerebral symptoms were evidently on the increase. On the 12th, the right pupil became greatly dilated and fixed, but she saw perfectly with both eyes; the stools were very dark and offensive; her respiration was difficult; the fluids regurgi-

tated through the nostrils. She took mercury, but without any improvement; the disease went on increasing, and she died on the 21st. She complained constantly of intense headach and raved much, particularly at night, but was never comatose, and had no paralysis except of the muscles of deglutition for about two days before her death. On examination, the base of the brain presented a very remarkable appearance. In addition to some congestion, the whole surface of the pia mater, immediately under the arachnoid, was dotted over with minute tubercles, some of which could be easily seen with the naked eye, when the preparation was fresh, and most of them could be still recognized by the aid of a glass. Some of them were to be seen taking the course of the vessels, in the fissure of Sylvius, and about the decussation of the optic nerves. Dr. Lees said, he was anxious to lay the specimen before the Meeting, as many cases of this kind had been set down as cases of ordinary meningitis, and the tubercular deposition looked upon as an effusion of lymph. The disease has been described by Dr. Green, of London, as tubercular meningitis. He says it appears at first in the form of a homogeneous mass, and resembles the tubercular infiltration met with in other organs. The symptoms are chiefly intense pain of the head, with delirium and vomiting, and there is no rigidity or well-marked coma. Dr. Green has observed, that in all his cases there were also tubercular depositions in the lung; but in Dr. Lees' case the lungs appeared to be quite free from tubercular depositions.

3. *Ulcer of the Stomach—Coronary Artery opened.*—Mr. Smith laid before the Society an example of ulceration of the stomach, taken from the body of a man, æt. 79, who had been for many years before his death subject to biliary derangement, and symptoms of aggravated dyspepsia; three weeks before his death, he was attacked by severe vomiting, and considerable quantities of blood were ejected from the stomach; he could not retain in the stomach either solids or fluids; the deglutition of fluids, in particular, was followed by severe vomiting; the alvine discharges were also mixed with blood; he also suffered from an enlargement of the prostate gland. *Autopsia.*—A circular ulcer about the size of a shilling was found near the pyloric end of the lesser curvature of the stomach; the ulcerative process had opened the coronary artery; the surface of the ulcer was foul, and of a green colour, and the stomach very vascular; the middle lobe of the prostate gland was greatly enlarged, and formed an irregular tumour, projecting into the bladder; the bladder itself was distended, so as to be capable of containing nearly three quarts of fluid; its parietes were remarkably thin, but the muscular fibres unusually distinct, giving the interior of the organ a reticulated appearance; between these packets of muscular fibres, the walls of the bladder were diaphanous; the mucous membrane presented the anatomical characters of chronic cystitis. (*Museum, Richmond Hospital*).

4. *Fracture of the Neck of the Femur, with Chronic Rheumatic Arthritis.*—Mr. Smith presented a specimen of fracture of the neck of the femur, occurring in a person aged sixty-six, who had been

subject to chronic rheumatic arthritis. Mr. Smith said, that he had very seldom met with cases of the coexistence of this disease with fracture of the neck of the femur within the capsular ligament. The present case, however, was one of this description. The shortening of the limb did not amount to an inch, and the eversion of the foot did not appear so well marked as it usually is, the two fragments being interlocked in each other so as to prevent eversion of the foot. The fibro-synovial folds were torn across completely on the anterior surface, but posteriorly they were perfect. Mr. Smith said, that the reason of this was, that when the neck of the bone is broken, the shaft being rotated outwards, stretches the anterior part of these folds, while the posterior part is relaxed; in fact, the rotation outwards approximates the intertrochanteric line to the base of the head of the bone. Hence the front is usually torn, while the posterior portion remains intact. As to the arthritis, one of the principal effects of it was an ivory deposit on the head of the bone. The disease in this case presented one peculiarity, namely, that the ligamentum teres had not entirely disappeared; it was, however, unravelled in its texture, and reduced to a few shreds. Mr. Smith observed, that it was rather rare to meet with the coexistence of fracture of the neck of the femur with chronic rheumatic arthritis. He could not say what was the reason of this; perhaps it might arise from the inability of the patient to walk, which might render him more cautious, and consequently less liable to accident, or, perhaps, from the partial absorption of the cervix femoris, the head and shaft of the bone were brought into closer approximation. This, perhaps, might account for the rare occurrence of fracture of the neck of the femur in cases of chronic rheumatic arthritis. Mr. Smith also exhibited a specimen of complete absorption of the neck of the bone in this disease, in which the head had sunk below the level of the trochanter major. (*Museum, Richmond Hospital*).

5. *Cancer of the Face.*—Dr. Kirkpatrick exhibited a specimen of open cancer of the cheek, taken from the body of a woman, æt. 45. The disease began (about seven months before the patient's death) upon the inside of the cheek; the substance of which it gradually destroyed, perforating the cheek by a large irregular aperture, which was occupied by a slough, and surrounded by a large circle of cancerous ulceration, the edges of which were everted; there was a very offensive discharge of matter and saliva; the glands of the neck, especially about the angle of the jaw, were enlarged, and many of them had suppurated; the disease had also extended along the fauces, and cancerous vegetations had sprung from the velum; there was very little hæmorrhage from the ulcer; the woman died, worn out by the quantity of the purulent discharge, and by an obstinate diarrhœa. (*Museum, Richmond Hospital*).

Eighteenth Meeting, April 3rd, 1841.

Professor Graves in the Chair.

1. *Pericarditis—Permanent Patency of the Aortic Valves.*—Dr.

Law exhibited the recent parts in this case. The subject of the case had frequently suffered from articular rheumatism, the first seizure having occurred as far back as five years before he came to hospital, and in the intermediate time he had had many distinct attacks. During the first he did not notice any internal affection, but after the second or third attack, he became subject to a feeling of uneasiness in the præcordial region, attended with palpitations, and at each succeeding one, these symptoms progressively increased. The patient, a painter, aged about 22, presented, on admission, the following train of symptoms: the action of the heart was strong, the pulse full, vibrating, and thrilling; there was extensive dulness over the præcordial region, a distinct double bruit de soufflet over the lower part of the sternum, and a single bruit de soufflet below the left mamma; there was also a distinct fremissement ascending from the aorta along the course of the great arteries of the neck and upper extremities. In addition to this, the man was labouring under pulmonary disease at the time of admission. He had crepitus over the lower part of both lungs posteriorly, and dulness on percussion in the posterior part of the right lung. On making a more attentive examination with the view of ascertaining the cause of this dulness, Dr. Law found that its position was not altered by any change of posture in the patient, and came to the conclusion, that it was either hepatization of that portion of the lung, or an encysted empyema retained in its position by the nature of its peculiar connexions. With respect to the phenomena connected with the heart, there was a very peculiar alteration in its rhythm, the first sound being remarkably short, the second more prolonged than natural. The pulsation or throbbing observed along the course of the principal arterial trunks was always visible, and was not altered or affected by any change of posture. There was also a distinct sound of friction over the heart, in addition to the double bruit de soufflet behind the sternum and the single one below the mamma. A review of these symptoms led Dr. Law to predict disease of the aortic and mitral valves in addition to chronic pericarditis. On opening the chest, the pericardium was found to be partially adherent to the left lung, and presented, on its anterior surface, a rough coating of lymph. There was then that condition of the external surface of the heart capable of producing the phenomena of the friction sound, independent of any rubbing between the heart and the pericardium, the cavity of which was completely obliterated by adhesion. The false membrane connecting the heart and pericardium was converted into a dense and almost fibro-cellular structure, in some places nearly half an inch thick. The aortic valves were thickened on their free margin, and studded with deposits of lymph. The mitral valves were also thickened, and there was extraordinary concentric hypertrophy of the heart. The heart weighed thirty-six ounces; its vertical diameter was six inches, its transverse four; and the septum had so much encroached on the right ventricle, as almost to obliterate it. On examining the lungs, both were found to be engorged with a sero-sanguineous fluid. In the postero-inferior part of the right side of the chest, where extensive but circumscribed

dulness had existed during life, Dr. Law found that the cavity of the chest, in this situation, was divided into distinct loculi or sacs, containing fluid. This accounted for the dulness of sound on percussion, while the cellular bands connecting the pleura pulmonalis and costalis conveyed the sound of respiration to the surface.

2. *Stricture of the Urethra—Perineal Fistula—Hernia of the Mucous Membrane of the Bladder—Rupture of the Recti Muscles of the Abdomen.*—Mr. Smith presented a remarkable specimen, illustrating the effects of stricture of the urethra, taken from the body of a man, ætat. 52, who had, for many years previous to his death, laboured under a tight stricture situated in the membranous portion of the urethra, and ultimately died in consequence of the supervention of peritoneal inflammation. The stricture occupied the whole of the membranous portion of the canal; in front of the membranous portion were two small bridle strictures; behind the stricture there existed the orifice of a fistula, which conducted by a very tortuous route to the perineum, where it terminated in the centre of a large ulcer. Upon the posterior surface of the bladder, above the vesiculæ seminales, there existed two tumours of considerable size, formed by the protrusion of the mucous membrane between the muscular fibres of the organ; they each communicated with the bladder by a very small orifice, the recti muscles of the abdomen were completely torn across in their lower third, and blood in large quantity was poured out in their sheath, between the layers of the abdominal muscles and beneath the integuments; this occurred a short time before the patient's death, during a paroxysm of straining to pass water. The bladder presented the anatomical characters of chronic cystitis, and the peritoneum those of acute inflammation. (*Museum, Richmond Hospital*).

3. *Lymph on the Base of the Brain.*—Dr. Corrigan presented a specimen of lymph effused at the base of the brain taken from the body of a female who had been admitted into the Hardwicke Hospital on the 17th of March, labouring under maculated fever of a low character. She was irritable, weak, and restless, complained of severe headach, and could not sleep; the fæces and urine were generally passed involuntarily. At the time of admission she was in the eighth month of her pregnancy. On the 29th, without any premonitory symptoms, or any labour pains, the child was expelled alive, but died some time afterwards. The lochia also appeared, but after some time became suppressed. The delirium under which she had laboured for several days was now replaced by coma, and she died on the 1st of April. In addition to the coma, she became universally jaundiced a short time before death. On examination, the following conditions were observed. Dr. Corrigan said he had brought the uterus with the other parts, not that it presented any peculiar pathological appearance, but he thought it might not be uninteresting to show the state of its cavity at so recent a period after delivery. The interior of the uterus presented many of the phenomena of inflammation, particularly at the part where the placenta had been attached. With respect to the brain, it was exceedingly firm. The whole sur-

face of the organ was very vascular, and presented a very remarkable bright red tinge at various points. A portion of this redness was really the result of increased vascularity, but a portion also was produced by effusion of blood on the pia mater, as could be seen with a microscope. The base of the brain, in front of the pons varolii, was covered with lymph. The principal features of the case were the extreme hardness of the white substance of the brain, the brilliant shading of red on the surface, and the effusion of lymph on its base. The patient was delirious for several days,and comatose for a day or two before her death.

4. *Apoplexy.*—Dr. Corrigan presented the recent parts in this case. The subject of the case was a medical gentleman, who had been attended by Dr. Stokes and himself. On Monday week, this gentleman first complained of pain in the head, supposed to arise from influenza ; the pain was limited in a great degree to the supra-orbital region of the right side. While at breakfast, something strange was observed in his manner, and he appeared ill. He took some medicine, thought he felt himself better, and went about his business as usual, until the following Thursday, when he appeared absent and forgetful. He visited a patient, however, on that day, wrote an accurate prescription, returned home and remained up during the evening. On Friday morning, he was visited by Dr. Corrigan, who found him in bed drowsy and dozing; easily roused, however, but with a strong tendency to relapse. He complained still of severe pain in the right supra-orbital region, the pupils were sluggish, and Dr. Corrigan thought he observed a slight degree of strabismus. He said, however, that his vision was very perfect. At this time he had no muscular twitching or paralysis. Next day (Saturday) his pulse was observed to be very slow, not more than from 45 to 50 in a minute ; occasionally, however, it became more rapid. He had slept during the night. He got up and sat in his room both on Saturday and the following day, was quite rational, had no symptom of paralysis, and merely complained of pain in the head and drowsiness. An attempt was made to bring his system under the influence of mercury ; but the only effects produced by it were swelling of the jaws and throat, and dysenteric symptoms. On Tuesday, he got paralysis of the left upper extremity. His respiration, however, was natural, and his intellect unimpaired. On Wednesday night also, he was quite rational, and spoke to his wife for some time in a collected manner. On Thursday, his breathing became stertorous, but he did not lose his recollection or intelligence until a short time before his death, which occurred on the same night. For several hours before death he complained of violent palpitations of the heart. It was also stated by his friends, that some months before this attack he was seized with symptoms of fainting in his sleep ; but Dr. Corrigan thought it probable that this was a fit of epilepsy. On examination after death, a quantity of extravasated blood was found on the free surface of the pia mater, which appeared to have exuded from a rent situated at the junction of the middle and anterior lobes of the right hemisphere. On cutting away the substance of the brain in the vicinity of this

rent, Dr. Corrigan felt something like a sense of fluctuation, and, on further examination, found that it was a large apoplectic cavity, filled with semifluid blood, and capable of holding a large apple or an orange. Around this cavity, the substance of the brain presented a very remarkable example of the yellow ramollissement. In the posterior lobe of the left hemisphere there was also an apoplectic cyst, as large as a walnut, and filled with a broken-down semifluid coagulum. Dr. Corrigan observed, in conclusion, that the most remarkable points of the case were, the insidious nature of the attack and the coexistence of complete intelligence with such extensive destruction of the substance of the brain. In the same individual, the heart presented a tolerably good specimen of active aneurism. The left ventricle was thickened and dilated; the right was also in a state of hypertrophy. There was no disease of the valves of the aorta or pulmonary artery.

5. *Scrofulous Disease of the Mesenteric Glands.*—Dr. Lees presented a specimen of degeneration of the mesenteric glands in a child who had come under his care, with symptoms of phthisis about a month since. During its illness there was some diarrhœa, but not to any great amount. On dissection the lungs were found to be filled with tubercles, while the mesentery and omentum presented a very remarkable example of scrofulous degeneration. The mesenteric glands presented examples of scrofulous disease, from the crude tubercle up to complete softening. The same alterations were visible in the aggregate and solitary glands of the intestines, and the mucous membrane was abraded, and looked as if it had been sprinkled over with fine sand.

6. *Ulceration of the Larynx.*—Dr. Greene exhibited a specimen of scrofulous ulceration of the cartilages of the larynx, a condition mentioned by Louis as of rare occurrence in phthisis. There were tubercles in both lungs, and what was somewhat remarkable, both sides of the chest returned a clear sound on percussion, and there was no relative difference. This phenomenon was attributable to two causes; in the first place partial emphysema of the lungs; and secondly, the great attenuation of the patient's chest, a state which, as is well known, always increases the sound on percussion. There was a cavity in one of the lungs about the size of a hazel nut, but owing to the causes above mentioned, and the absence of information to be derived from the phenomena of the voice, it was not detected during life. With respect to the larynx, the cartilages were loosened by ulceration, and hung into the cavity of the air tube; the epiglottis was also nearly destroyed. The patient did not present the three symptoms which have been set down by M. Louis as characteristic of disease of the cartilages and epiglottis; viz., constant pain, regurgitation through the nostrils, and difficult deglutition. He had neither constant pain nor regurgitation, but he had difficult deglutition. Dr. Greene, in conclusion, stated that he was informed by Dr. Stokes that there was a preparation of phthisical ulceration of the cartilages of the larynx, similar to this, in the Museum at Park-street. Mr. Smith mentioned

to him that several examples of it had come under his notice, some of which were preserved in the Museum of the Richmond Hospital.

Nineteenth Meeting, April 10th, 1841.

Professor Harrison in the Chair.

1. *Apoplexy—Disease of the Arteries of the Brain.*—Mr. Hamilton said, that some years since he had been requested to examine the body of a gentleman, the history of whose case was this. One morning this gentleman went to the Four Courts, having been for some time previously subject to vertigo, with unusual irascibility of temper. While in Court he suffered greatly from giddiness, and was attacked with severe pain in the right supra-orbital region, which obliged him to return home. During the course of the afternoon he lost his speech, became paralytic upon the left side, and ultimately became insensible. He passed both urine and fæces involuntarily. Without any material change in his symptoms he died on the third day. On dissection, a large apoplectic effusion was found in the right hemisphere of the brain, amounting nearly to six ounces of blood. Almost all the larger arterial branches at the base of the brain were in a state of disease; their coats contained a considerable quantity of calcareous deposits, and were more or less thickened. The next case that came under his notice was that of a man aged sixty-five. After a convulsive fit, which bore considerable resemblance to an epileptic seizure, it was discovered that he had lost his speech, and had paralysis of the right side, with rigidity and stupor. Under active treatment he recovered so far as to be able to utter inarticulate sounds, and to point to his head as the seat of pain, but relapsed again, and died comatose. On examination there was found great venous congestion of the surface of the brain, and the left hemisphere was in a state of extensive ramollissement, contrasting very strongly with the rest of the substance of the brain, which was of a dusky brown colour. In this case the vessels of the brain were also diseased. At various points the arteries presented a yellow atheromatous deposit, the effect of which was, to thicken their coats, and reduce their calibre. The last case of this description Mr. Hamilton said he had examined that morning. The subject was a woman aged seventy-five, who had been seized with an apoplectic attack, followed by paralysis of the right side, with rigidity. She also had loss of speech, and passed both urine and fæces involuntarily. Under treatment she recovered the use of her speech in some measure, and was able to state that she had severe pain in the left side of the head. She lived nearly a month from the date of her first seizure. On dissection Mr. Hamilton found a slight degree of congestion of the vessels on the surface of the brain. The left hemisphere, particularly at its anterior part, exhibited a very good specimen of ramollissement, the substance of the brain being broken down, and of a pale red colour, the disease extending into the corpus striatum. The rest of the brain was firm and natural, but the arteries exhibited the same yellow deposit in their coats, as described in the former cases, and of

which some specimens were laid before the Meeting. Mr. Hamilton said, that from a review of these cases, a question naturally arose, whether this state of the arteries was connected with ramollissement, or whether it was merely an accidental coincidence. Dr. Abercrombie seems to think that ramollissement is a process analogous to mortification in other parts of the body, and that the absence of putrescence and the other phenomena of mortification, are owing to the parts within the skull not being exposed to the influence of the air. However this might be, Mr. Hamilton was of opinion, that such a state of the arteries must be ultimately productive of disease of the brain.

2. *Malignant Tumour of the Eyelid.*—Mr. Adams exhibited a specimen of malignant tumour of the lower eyelid. The disease commenced in the form of a wart, which gradually assumed the characters of scirrhus, and ultimately became infiltrated with melanotic matter. At the time of the patient's admission into the Richmond Hospital, it was of eighteen months' duration, and presented in a very remarkable manner all the characters of scirrhus combined with melanosis. It had a narrow base, bled copiously, and exhaled a fœtid odour. The man had lost flesh, but had not a decidedly unhealthy appearance. He stated, that he had been looking ill, and losing flesh for the last six months, which he attributed to constantly recurring hæmorrhage from the tumour. There was also considerable enlargement of the lymphatic glands on the same side of the face and neck, an occurrence which seemed to indicate the malignant nature of the disease. These facts, Mr. Adams observed, would seem to contra-indicate any operation; but as the tumour had a small base, and as the man was suffering from repeated hæmorrhage, it was determined to remove it. An additional reason might be derived from the recollection of a case (the preparation of which was preserved by Mr. Smith), in which the disease commenced in a similar way in the lower eyelid, and went on until it destroyed the whole globe of the eye. The tumour was, therefore, removed. Mr. Adams said, he had brought the tumour, and would send it round for inspection, as it presented a very good specimen of the combination of scirrhus, with melanosis. The radiated and fibrous appearance of the scirrhus portion was very evident, and contrasted well with the melanotic matter which was deposited in the shape of small black granules. Mr. Adams said, he believed the disease was malignant, and would most probably return. (*Museum, Richmond Hospital*).

3. *Cirrhosis of the Lung—Dilatation of the Bronchial Tubes.*—Dr. Greene presented a specimen of cirrhosis of the lung, combined with dilatation of the bronchial tubes, closely resembling phthisical cavities, and attended during life with a train of symptoms, which rendered it almost impossible to distinguish the case from one of genuine phthisis. The patient was a woman, who had been for several years subject to cough of an intractable character. After some time she began to lose flesh, had several attacks of hæmoptysis, and suffered from night perspirations; not, however, of an extreme character. She also had copious expectoration, but the sputa were never mixed with caseous matter. There was no diarrhœa, and the patient

said she never knew that any of her family died of phthisis. The thorax was flat under the right clavicle, and the right side did not expand during inspiration. Over the right infra-clavicular space there was cavernous respiration, and distinct gargouillement with bronchial respiration could be heard in various parts of the chest. There was also distinct pectoriloquy in the right infra-clavicular space, over the inferior angle of the scapula, and in the right axilla. In the left lung there were mucous, sibilous, and sonorous rales, with the usual phenomena of bronchitis. Dr. Green, in exhibiting the diseased lung, observed, that at one period the patient had laboured under pleuritis, for the pleura was greatly thickened; the lung was diminished in size and indurated; the diaphragm was adherent to the liver. In the dilated bronchi the cartilaginous structure of the tubes could be traced distinctly. There was no trace of tubercular deposition in either of the lungs. The cavities formed by the dilatation of the tubes were of considerable size and did not contain purulent matter; they were largest near the surface of the lung and towards its upper part. (*Museum, Richmond Hospital*).

4. *Softening of the Stomach.*—Dr. Lees exhibited a specimen of softening of the stomach taken from the body of a man ætat. 63, who died on the previous morning. When he first came under Dr. Lees's care, he was suffering from frequent attacks of vomiting, which were relieved by the use of bismuth and lime water. He discontinued his visits as soon as he got relief, but returned about a month ago with the same symptoms. His complaint had now assumed a much more unfavourable character; the vomiting resisted every mode of treatment, and he died on the 9th of April. The stomach was found so soft and friable in its texture, that the finger readily passed through it at the splenic end; the mucous membrane was very soft and pulpy, particularly towards the splenic end, and the whole organ presented a remarkable mottled appearance. Dr. Lees said that some persons thought this softening took place after death, but Andral looks upon it as the result of disease. He states that it occurs chiefly in old persons, and commences with disturbance of digestion and loss of appetite, followed by disgust for every species of nutriment, nausea, and a sense of weight in the stomach. The tongue is sometimes red and dry, sometimes furred, occasionally almost natural. This state may continue for months. At length constant vomiting and emaciation supervene, and the patient is carried off. On dissection, nothing is found but softening of the stomach. Andral also mentions, that this softening may be partial and in patches, and is most frequently observed towards the splenic end of the stomach. It is in this situation also, that the enlargement of the veins ramifying in the coats of the stomach is most distinct. Dr. Lees said, that he considered Andral's account to be extremely graphic and accurate, and that it corresponded exactly with what he had observed in the case he had just laid before the Meeting. The situation and extent of the softening, the enlargement of the veins, and the whole appearance of the parts in his case confirmed the accuracy of Andral's description.

The substance of the liver was also softened. The patient was a man of temperate habits.

5. *Malignant Tumour in the Popliteal Space.*—Mr. Smith exhibited an example of malignant disease occupying the popliteal space and implicating the knee joint, taken from the body of a man, ætat. 53. The patient, upon his admission into the Richmond Hospital, stated that about fourteen months previously, he had noticed a small tumour in the ham, soft, moveable, preceded for a period of two months by a sense of weakness in the part, and occasionally subject to darting pain, but free from pulsation. Six months after its appearance, he fell from a ladder, and the knee of the affected side was bent violently under him; this accident was productive of a rapid increase in the volume of the tumour, and an aggravation of the pain. When he was admitted into the hospital, the tumour occupied the entire of the popliteal space, and projected at the inner side of the knee joint; it was firm and fixed; it gave to the finger a sensation of deep fluctuation; it was not in any respect influenced by pressure upon the femoral artery; there was no œdema of the leg or foot, but the joint was semiflexed and the pain severe. About a week after his admission into hospital, a small puncture was made into the tumour, and about an ounce of fluid given exit to; this, upon analysis, was found to be principally synovia. Four days afterwards the tumour and knee joint were attacked with acute inflammation, the puncture assumed a sloughy aspect, and the discharge had become sanious and offensive; his pulse had risen to 124, and his tongue was white and furred; to these symptoms succeeded frequent startings of the limb, fluctuation above the patella, ardent thirst and sinking of the countenance, a dry brown tongue, an intermitting pulse, beating 130 in a minute, total failure of appetite, and cessation of the discharge from the wound; the foot was cold and œdematous; he then became delirious and jaundiced, and died upon the 9th day after the tumour was punctured. Upon examination, the tumour was found to present the character of fungoid disease; it occupied the whole of the popliteal space, in the glands of which it seemed to have commenced; the lower extremity of the back of the femur between the condyles was absorbed, and a large excavation formed, which by two irregular apertures in the cartilage, communicated with the knee joint, the synovial membrane of which was inflamed and covered with lymph; the joint contained purulent matter. The tumour presented considerable variety in appearance and structure; in one part consisting of a soft gelatinous substance, mixed with coagula of blood, enclosed in a distinct sheath, and extending up between the hamstring muscles to the upper third of the femur; in another place there was a small sac containing spiculæ of bone and purulent matter; the excavation in the femur contained detached portions of the cancellated texture of the bone; the osseous tissue was highly vascular. Mr. Smith remarked, that in this instance, the puncture of the tumour was an opening made into the knee joint, and hence the train of fatal symptoms which ensued, and that the possibility of a communication with

the knee joint existing, should render the practical surgeon cautious in making exploratory punctures into malignant tumours in the popliteal space. (*Museum, Richmond Hospital*).

Twentieth Meeting, April 17, 1841.

Dr. Law in the Chair.

1. *Induration of a Portion of the Brain.*—Mr. Carlile exhibited a portion of brain taken from the body of a gentleman who died on last Wednesday week (April 7th). This gentleman, who had been always remarkably strong and healthy, entered the army in 1830, and some time in 1833, was ordered with his regiment to the West Indies. While at Antigua, he went one day to bathe. He wore at the time a large straw hat, and the wind being high, it was blown off and lost. He walked back to the barrack, a considerable distance, and under a burning sun with a towel over his head. He had an epileptic fit soon after, and remained ill for some time; he recovered, however, gradually, and about five months afterwards got the fever of the country, for which he was blooded largely; when convalescent, he was invalided, and returned to this country in 1833; he came to Mr. Carlile's house, and remained there until June 1834, being all the time under the care of a distinguished physician. His treatment consisted chiefly of leeching the head, cupping the nape of the neck, blisters, and the application of tartar emetic ointment to the spine. When he first arrived he had the epileptic fits every six weeks or two months, but while using the tartar emetic ointment the fits became more violent, and of more frequent recurrence; he also tried mercury, nitrate of silver, arsenical solution, cold shower baths, and a temperate regimen. Notwithstanding this, his complaint, instead of yielding, became greatly aggravated; he would have as many as three epileptic seizures in the course of the day and night; in fact, his state was so distressing, that Mr. Carlile begged of his relatives to remove him. As the remedies employed did him no good, he was advised to try the effects of country air, and a temperate, active life. On arriving in the country, he betook himself to field sports, from which he derived considerable benefit; his health improved remarkably, and the fits diminished in frequency. They now began to assume a new character; he became sensible of the approach of each attack about five minutes before it supervened, an occurrence which had not been noticed before. This warning consisted in sickness of stomach, which generally preceded the epileptic seizure about four or five minutes, allowing him time to withdraw from society, and lie down in his room until the attack was over. The fits, however, continued at intervals for two years, from 1834 to 1836, and assumed a periodic character. During the spring and autumn they were violent and unusually prolonged, the paroxysms of convulsions lasting with slight intermissions for three or four days successively. After each of these attacks he used to recover speedily, regaining the full enjoyment of all his functions, and very good bodily health. His friends, however, began to notice the expression of his face becoming altered,

his mind getting weak, and his temper irascible. The physician who attended him in the country used to employ depletion during these prolonged fits, but he gave it up on finding that the remedies which seemed to do him most good were purgatives, particularly croton oil in doses from one to four drops. He went on in this way until about twelve months ago, when he had a violent attack. He then seemed to be doing very well for a long time, and continued so until last Wednesday week, when he had a fit while walking in the street. He was taken into a house, where he recovered so far as to be able to walk home. He remained, however, very weak and depressed in spirits. He continued to go about the house at intervals until the following Saturday, when he was seized with a violent fit of convulsions, which lasted with some intermissions until the following Monday. He then fell into a state of stupor, and remained so until his death, which occurred on the Wednesday following. Mr. Carlile was requested to examine the body. His general aspect and condition, and the appearance of the muscles, were those of a very healthy person. Mr. Carlile, upon examining the brain, found it apparently healthy, its surface natural, and no effusion of blood or serum on the surface or into the ventricles. On the right hemisphere there was more vascularity than usual, and the small superficial veins were very numerous; still there was nothing in it amounting to positive disease; but upon cutting into its substance, his attention was arrested by something that felt like a tumour in the anterior lobe of the right hemisphere. It was situated in the superior and anterior part of the lobe, and was about the size of a large walnut. It was about an inch and a-half in length, an inch in breadth, and the same in depth, and was imbedded in the substance of the anterior lobe. It did not present any difference of colour from the surrounding tissue of the brain, and could not, therefore, be recognized by the eye, but on passing the finger over the surface, its superior degree of solidity sufficiently indicated its extent. In the same way, when the knife was drawn across it, it felt much harder than the surrounding tissue. Mr. Carlile stated, that he had examined the whole of the brain with great care and patience, but could not detect any other morbid change in any part of it. The stomach and intestines were perfectly healthy. He had no doubt but that the morbid lesion discovered in the brain was the result of the coup de soleil as well as the chief cause of his symptoms. He heard from gentlemen who had practised in the tropics, and were familiar with the disease, that the first symptoms are those of local inflammation of the brain, ending sometimes in health, sometimes in madness or epilepsy, or death. Perhaps in this instance, lymph was effused, formed a new organization, and acting as a species of irritant, kept up an excited state of the brain and nervous system.

2. *Fracture of the Vertebræ.*—Dr. Hutton exhibited a specimen of fracture of the vertebræ and softening of the spinal marrow. The subject of the case was a stout, muscular man, who was admitted into the Richmond Hospital on the 4th of March, for a severe injury of the loins received the day before, in consequence of a wall, under which he was digging, having fallen on him. Both bones of the

right leg were also broken. On admission, there was a large patch of ecchymosis covering the whole of the lower part of the dorsal and the upper part of the lumbar region. He suffered great pain when pressure was made in this situation, and the least motion caused excruciating agony. Between the first lumbar and the last dorsal vertebræ, there was a larger and more distinct interval than usual, and on moving the first lumbar vertebræ, by means of its spinous process, a crepitus was produced. He had loss of power of the lower extremities, and impaired sensation in them, the external parts of the limbs being quite insensible, the internal still retaining a considerable share of sensibility. He had also retention of urine and fæces, having passed neither from the time of the accident. He stated, also, that he had been complaining of his chest before the accident occurred, and on examination, Dr. Hutton discovered pneumonia and bronchitis of the left lung. There was something, however, in his breathing not to be accounted for by the amount of pulmonary disease. His respiration, which was about twenty-eight in a minute, was laborious and heaving, with fluttering motions at the epigastrium, so that a person observing him would be disposed to think, that the diaphragm was acting without the intercostals. Dr. Hutton said, however, that he himself could not observe this phenomenon, although it had been noticed by others. On the eighth day, the urine, which had been drawn off night and morning with the catheter, was found to be ammoniacal, and about the same time an eschar began to form on the left buttock. Dr. Hutton observed, that this coincidence was remarkable, and thought that, perhaps, both effects might be attributed to diminished nervous influence. It was also a curious fact, that the bones of the leg united favourably, and that the patient had not the startings of the limb so common in cases of fracture. The treatment pursued was antiphlogistic, and the patient was put under the influence of mercury. The pulse, which at first was 154, fell to 100, but afterwards rose to 120; the respiration also fell to 20. The temperature of the lower extremities was at first about 62, and lower than the surrounding medium, but afterwards rose to 95. The patient ultimately sunk. On examination, Dr. Hutton discovered a fracture of the body of the first lumbar vertebra, running obliquely through it, so as to give the lower fragment a wedge shape. The body of the vertebra was pushed backwards, so as to narrow the spinal canal, and press upon the cord. At this spot there was a quantity of matter in the spinal sheath, and the cord itself was soft and pulpy; the whole of the cauda equina was bathed in pus, and greatly discoloured. The bladder was contracted, and its coats presented numerous traces of ulceration. The patient had passed for some time before death purulent matter mixed with the ammoniacal urine. The duration of the disease was six weeks.

3. *Gangrene of the Lung.*—Dr. Stokes exhibited a specimen of gangrene of the lung. He had not examined the parts as yet, but would proceed to do so, in order that the Society might have a better opportunity of judging of the appearance. The history of the case was short. The exciting cause of the disease was an extremely long ex-

posure to cold. The patient, a jaunting-car driver, was obliged to wait at the door of an hotel, during the greater part of one of the coldest of the winter nights. Two or three days afterwards he had rigors, followed by cough and difficulty of breathing. He remained in this state for three weeks, without any active treatment, and then, during a violent fit of coughing, an intense lancinating pain struck him in the right side. Dr. Stokes begged leave to draw attention to this point, as it would be found, that in many of these cases there was something very peculiar in the character of the pain which attends gangrene of the lung. In the majority of cases the invasion of the disease is marked by a much greater degree of pain than is felt in ordinary cases of pleuritis; and even up to the period of death, the patients are liable to paroxysms of pain of great violence. Dr. Stokes said he was inclined to think, that in such cases, the pain was not the measure of inflammation, but was connected in some degree with the gangrenous process. He recollected one case in which the disease ran a course of several months, and every eight or ten days there was an attack of frightful pain in that portion of the lung which was diseased. In this man's case the pain was constant, and was aggravated by inspiration. When brought to hospital, he exhibited all the symptoms of a person labouring under extensive disease of the lung. He had cough, difficulty of breathing, remarkable fœtor of breath, and enormous expectoration of dark red matter, resembling putrid blood. The quantity of this was immense, and every morning the spitting vessel was quite filled with it. There were two points connected with the case deserving of attention. When he came to hospital his pulse was quick, but after some time it fell to the natural standard, and ranged from 70 to 80. But at the time of his admission, although he had all these alarming symptoms, the physical signs were indistinct and trifling, and by no means commensurate with the extent and violence of the disease. Dr. Stokes observed that this was a very curious circumstance connected with gangrene of the lung, that of all the acute diseases of the chest, there was none in which, at the early period, the physical examination of the chest was so fallacious. In fact, a total absence of the physical signs may exist for weeks together, with decided fœtor of breath, and other symptoms indicative of gangrene of the lung. He knew the case of a gentleman who was attended by him, and afterwards seen in consultation by Sir H. Marsh, in which for three weeks he failed in detecting anything like the symptoms of gangrene. In the early stage of gangrene of the lung there is no relation between the symptoms and physical signs. In the case which he had brought before the Society, after a most careful and prolonged examination, the only indication of disease, was slight dulness in the right submammary region, and slight sibilous rale over the same side. The heart was normal in its impulse and sounds. Any one who saw the case, and contented himself with the information to be derived from the physical signs, would have no idea of its nature, or of the great destruction of the lung which was to follow. Gradually, however, the affected side became duller on percussion, as the process of consoli-

dation in the vicinity of the gangrenous spot went on, and for some time before death, the physical signs of a cavity were sufficiently distinct. Dr. Stokes then proceeded to exhibit the right lung which was the seat of the disease, and observed that it adhered to the diaphragm, and also to the parietes of the chest generally, presenting, in a very distinct manner, the markings of the ribs. He then opened the gangrenous cavity, which was filled with sloughy matter in considerable quantity. The surrounding portions of the lung were remarkably solid, almost of a cartilaginous hardness, and in their anatomical appearance resembling the effects of chronic induration of the lung. The cavity, which was of great size, was situated in the upper part of the lung, and was surrounded by a mass of indurated lung, of a grey colour, and containing a quantity of whitish granules somewhat like tubercles. On this point, however, Dr. Stokes said he could not pronounce any decided opinion. The patient had complained of violent pain in the side, a symptom which was explained by the inflammation of the pleura, which was covered with lymph. In this situation a friction sound was evident during life.

4. *Large Branch of the Pulmonary Artery opening into a Tubercular Cavity.*—Dr. Corrigan said that the case of hæmoptysis he was about to lay before the Society, was one of the ordinary kind, and possessed no interest except as affording an example of rupture of a branch of the pulmonary artery of considerable size. The patient was a man who had been admitted into the Whitworth Hospital for attacks of hæmoptysis, occurring during the course of phthisis. A few days since he had an attack which was arrested, but the hæmoptysis came on again last night, and carried him off in a few minutes. On opening the chest the lungs were found to be in a state of tubercular induration. In the upper lobe of the right lung there was a cavity, in which there was a portion of the lung lying, distinct from the rest, and merely attached by a small loose pedicle. The immediate cause of death was a rupture of a branch of the pulmonary artery of large size. Dr. Corrigan here exhibited the ruptured artery, with a small clot projecting from it, and tracing it up, found that it was one of the principal subdivisions of the pulmonary artery, and came off immediately from a branch as large as a goose-quill.

Modes of administering Copaiva.—Copaiva is most generally administered by the mouth, but sometimes in the way of clyster. It is often given in too small doses. They ought not to be less than half a drachm; and an entire drachm, given twice or thrice a day, is the most appropriate quantity. As it is a nauseous medicine on account of the quality, permanence and adhesiveness of its tastes, various devices have been contrived for facilitating its administration. Some take it simply in water, which is stirred briskly so as to collect the copaiva in a globule in the centre. A better plan is to make it into an emulsion. For this purpose each drachm may be triturated with the yolk of one egg, to which are afterwards to be added half an ounce of some aromatic, such as peppermint or cinnamon water,

and then as much simple water as pleases the patient; or the copaiva may be dissolved in its own volume of spirit of nitrous ether, and then agitated with twice as much mucilage and four times as much water. A favourite method of giving copaiva in recent times is in the form of boluses, made by inclosing the drug in thin capsules of gelatin, which are dissolved in the stomach. This ingenious plan was contrived a few years ago in Paris by M. Mothes, and the process for making the capsules has been kept secret. They may be made in the following manner: The body of the capsule is formed by rounding very smoothly the end of a cylinder of iron or hard wood, four lines in diameter and a few inches in length, dipping half an inch of this end into a saturated alcoholic solution of soap kept warm; then dipping it, when the layer of soap has concreted, into a strong hot solution of gelatin once, or oftener according to the thickness desired, and, lastly, removing the capsule by a screwing motion when the gelatin is quite dry. The top is made in the same way, but shorter and a trifle wider; and when the body is filled and the top slipped over it, they are united by rubbing over the line of junction a camel's-hair brush moistened with hot water (Feder, in Buckner's Repertorium). The form of pill, which, however, is ineligible on account of its insolubility, is best attained by sprinkling one part of calcined magnesia into sixteen parts of copaiva in a flat plate, and letting the compound stand till it thickens sufficiently to be worked into the proper shape. For some time past it has become fashionable in Britain to use what are called specific solutions of copaiva; for which every druggist has his formula, and which have the advantage of presenting the drug in a state of solution and capable of being diluted without being decomposed. They are commonly made with solution of potash and spirit of nitrous ether, and the following is a convenient formula in use in this city: Boil gently for fifteen minutes two ounces of copaiva with two ounces and a-half of aqua potassæ; add, when nearly cool, an ounce of spirit of nitrous ether; and, when the mixture has been at rest for twelve hours, remove the intermediate liquid from the soapy sediment which falls and the lighter fluid which floats on the surface. In these preparations a part of the volatile oil seems to be separated, and most of the resin deposited in the form of soap. M. Velpeau, not long ago, proposed to administer copaiva in the way of clyster instead of by the mouth. He found it very efficacious when given in divided doses to the extent of an ounce daily in the form of emulsion, to which a little laudanum was added to prevent its too speedy discharge from the gut. Many now prefer the pure volatile oil to any form for administering the crude drug; and though some call in question its superiority, and a few even doubt its efficacy altogether, I am satisfied from observation, as well as many reports from medical friends, that it is at least as effectual as copaiva, efficacious in less doses, and not so apt to occasion sickness. It is best given in emulsion, composed of equal parts of the oil of rectified spirit, peppermint or cinnamon water, and syrup or mucilage. Among the inconveniences attending the

use of copaiva, sickness and vomiting are the most frequent. This effect may sometimes be prevented by multiplying, but diminishing, the doses; by altering the form, especially to that of solution; by uniting an aromatic water with it, or by directing the patient to chew a piece of cinnamon or nutmeg after each dose. Occasionally a sharp febrile attack is occasioned when the medicine has been taken for some days in gonorrhœa; but as this attack goes off with perspiration in twenty-four or thirty-six hours, and is commonly attended with arrestment of the discharge, it ought not to occasion annoyance, and scarcely requires any treatment. The doses of the preparations of copaivæ are, Copaivæ, m. xv. ad fl. scr. iv. Copaivæ Oleum, E. m. ad m. xxx."

The above extract is from the recent work of Dr. Christison, " A Dispensatory or Commentary on the Pharmacopœias of Great Britain. Edinburgh, 1842." Dr. Christison has taken much pains to make that part of the Dispensatory which treats of the action and uses of medicines, therapeutical and physiological, as full and satisfactory as possible. He has admirably succeeded, and no one will regret the purchase of his work.

Case of Operation for Imperforate Anus, by Dr. Waters, Parsonstown.—On the 10th of February, Mrs. M. was confined of a strong male child. She was attended by a nursetender, who did not discover until the following day, that the child had been born with imperforate anus. I was called in on the 11th. The child had had two or three doses of castor oil before the malformation was discoved. I found it suffering intensely. The abdomen tense and painful on pressure; no vomiting. The central raphe of the perineum was well marked, but there was not the slightest trace of anus. Pressure over the abdomen did not produce any tension or fulness in perineo.

As there was not any time to lose, I emptied the bladder, and made a free incision into the central line of the perineum, and carried the wound upwards and backwards above an inch without discovering any trace of the intestine. I then had recourse to a bistoury, and succeeded in finding the extremity of the rectum, terminating in a distinct cul de sac, opposite the promontory of the sacrum, filled with hardened meconium, which I had some difficulty in dislodging. I got hold of the edges of the intestine which I gradually *brought down*, and united to the edges of the integuments by four points of suture; I did this with the idea of presenting a *continuous mucous surface* to the passage of fæces, and so prevent irritation of the wound, and also, if possible, to *prevent adhesion* by presenting two mucous surfaces to each other. The bowels were freely acted on immediately after the operation, and the abdomen fomented until pain, &c., were removed.

The sutures were removed on the third day, and every thing progressed favourably until about ten days since, when the wound commenced to contract rapidly. I counteracted this by the regular introduction of a large bougie, and occasionally pieces of prepared sponge.

The contraction only exists at the surface, the remainder of the passage is lined by the intestine, and does not appear disposed to narrow its calibre.

April 7th. Mr. Waters writes, "I may add that the case is going on most favourably. The child's general health is very good, and there is not any difficulty experienced in keeping the opening in the integuments sufficiently dilated. The tendency to contract only exists in the mere integuments, above this the intestine preserves its natural size."

It is a point of much interest that Mr. Waters was not aware of M. Amussat's mode of operation, which is precisely the same as that followed in the above case. In a former Number we laid his method before our readers. Mr. Waters was led to adopt the plan he followed by his own reasoning on the case, and it affords an example that good surgeons think the same every where.

A Letter on the Cold Water Treatment of Prissnitz at Graffenberg.—As the cold water treatment at Graffenberg by Prissnitz has excited so much interest, we think the following extract from the letter of a gentleman who was a patient there in June last, may be acceptable to our readers.

"It requires great patience and perseverance to go through the cold water cure, and it is decidedly the most discouraging of any other. I shall now give you an exact account of what I have to go through every day, as well as all other persons who are able to bear it. The attendant comes into my room at 5 o'clock A. M. with a wet sheet as cold as ice. I get up, while he puts a large thick blanket on the bed over which he lays the sheet, which I have to stretch myself on, when he wraps it close all about me, and then regularly packs me up, so that I am unable to stir a limb, and then puts a soft down bed over all. I remain in that enviable state for one hour; my first impression was that I should be perished to death, but in about fifteen minutes I was in a most comfortable heat and generally slept until 6 o'clock, when the man enters and unpacks me, taking the sheet away leaving the blanket close about me, when I then go to the bath room, which is situated but a few steps from my bed room, when I plunge in head and heels. I am them well dried, and after being dressed, I set out to walk until 8 o'clock, when I go to breakfast, first taking three or four tumblers of cold water, and about six more before night. Fancy about three hundred persons from all nations sitting down to breakfast on bread, butter, and milk, there being no tea or coffee allowed; we have also abundance of strawberries, so that I assure you we all feel perfectly content, and enjoy it much: at 10 o'clock I must be in my room to undress and take a douche bath, which at first I did not get enamoured with. The water is conveyed in wooden pipes from the mountain, and is as cold as possible. When that is over and I am dressed, I have but a short time to walk, as I must be in my room again at half past 11 o'clock, where a sitz bath is brought in, where I remain sitting for twenty

minutes, after which I have until 1 o'clock to amuse myself in the best way I can, when the dinner bell rings and we all congregate as we did in the morning. The room is a very fine one, being 120 feet long by 50 broad and capable of dining 500 persons, which number and more are here under cure, but a great many stop at Frywalden, a small and neat town one mile, and where Prissnitz goes twice a day to visit his patients. You would suppose I had the remainder of the day to myself, but not so, for at 5 o'clock I must again go into the wet sheet, and take the bath after, as in the morning. We meet at 8 to supper, which consists of the same fare as at breakfast; I am generally in bed by ten, but not before the man comes in with two long wet linen bandages, which he puts round my waist, and at the back of the neck, and between my shoulders, by way of making me *comfortable* for the night. You can fancy from the above how I am to pass my days here, that I have not much idle time on my hands. I did not mention that in addition, I have to swallow from twelve to fifteen tumblers of cold water. Graffenberg is a very high hill in the centre of three valleys, and what makes it very picturesque, it is all finely wooded at the top, and walks made all through, and on the sides, with numerous seats of all dimensions, placed for the company: and an amateur band comes from Frywalden twice a week to play, and on every Sunday there is a full band that plays all the time we are at dinner, and again after supper, when such as are inclined, commence dancing."

A Case of slow Pulse with fainting Fits.—A gentleman, aged sixty-four, in December, 1834, whilst hunting, fell from his horse on his head, with his chin thrown violently on his sternum. He was stunned, and on recovering himself, he said that he "had broken his neck." He was attended by Mr. Dix, of Long Buckley, in Northamptonshire. He complained of general soreness and stiffness, and of great pain in the neck about the cuneiform process and condyles of the os occipitis. He was helpless and could not move in bed, and was totally unable to rotate the head. He was cupped, &c., and the head supported by an air-collar.

The pain in the neck continued about six weeks. At the end of three months he was enabled to be removed to London, and was seen, I believe, by Mr. Keate. Mr. Dix saw this gentleman about a year afterwards, looking very well, and in excellent spirits, but still complaining of a difficulty in moving the head.

There was no further particular observed in this case until January, 1837, when he had a fainting fit, whilst walking out. Mr. Jackson, of Stamford, was sent for, and he found the pulse at twenty in the minute.

In the same year, after having been at the spring races at Newmarket, and excited, and having fasted for several hours, this gentleman had a second fit.

In the following June, after a similar excitement, he had another attack. At this time he was attended by Dr. Mitchell, and his pulse was then twenty-five in the minute.

When I first saw this gentleman in March, 1837, his pulse, when he was free from excitement or casual disorder, was thirty-three, but it was easily altered. Mental excitement usually increased it, and, in general, this was followed by a corresponding slowness of the pulse, and often by a fainting fit; and a sudden rise of the pulse, or even a gradual increase above the point, that might in his state be called his healthful standard, usually indicated mischief, and was found to be a bad symptom. Costiveness, and disorder of the stomach and bowels, always affected the pulse, by increasing or diminishing it, and were the most invariably exciting causes of a fainting fit. Gout, to which he was very subject, was another cause.

The general character of the pulse, when he felt well, and was free from disorder, was firm, full, and free; sometimes quite regular, sometimes intermittent.

The attacks increased in frequency as well as in degree, as time advanced, and the first most severe and alarming *succession of fits* occurred in June, 1838. On the previous day, this gentleman had eaten heartily of a variety of substances at his dinner, and on the following day, about one o'clock P. M., syncope came on, and a succession of fits continued till half-past six or seven in the evening, with intervals of one or two to fifteen minutes between the attacks. I gave him brandy and other stimuli, without stopping or even abating the fits; on the contrary, they seemed to increase the mischief, for they made him sick, and disordered his stomach. His pulse on this occasion sunk considerably; it chiefly ranged between twenty and fifteen per minute, but at times it fell to twelve, ten, nine, eight, and at three or four different times, *when the patient was quite sensible and not in a fit*, I counted his pulse as low as seven and a-half in the minute. Dr. Mitchell, on a subsequent occasion, also observed this very low state of pulse, as did Mr. Cullen, who was then acting as my assistant.

If the finger were placed on the radial artery, the approach of a fainting fit might always be known, sometimes for a second or two before it manifested itself by any change of the countenance. The pulse would cease before the syncope took place; and the fit would continue till the heart again beat, when the face would redden and consciousness return with a wild stare and occasionally a snorting, a slight foaming at the mouth, and a convulsive action of the muscles of the mouth and face.

The frequency of the attacks was uncertain. Sometimes the patient would have two or three in a day, sometimes one in two or three days, at other times one in a week; sometimes one in a fortnight, or three or four weeks. Sometimes the fit would be severe and all consciousness be lost, at other times there would be a mere threatening or giddiness.

Stimulants, nervous and antispasmodic medicines, were had recourse to, for the purpose of warding off the attacks, but without any marked advantage, and the treatment that was found at length to be the best, consisted in carefully regulating the bowels, preventing the formation of acid in the stomach, giving a plain nutritious diet, with

three or four glasses of wine a-day, or a proportionate quantity of brandy and water.

As before stated, the frequent exhibition of stimuli not having the desired effect of stopping the attacks, but rather being productive of injury by exciting the system and disordering the stomach, the treatment that Dr. Mitchell and myself found to be the best, during a fit, was simply to fan the face, apply Eau de Cologne, &c., to the nostrils, forehead, and temples, and, if there were a disposition to a continuance, to give coffee or tea.

The most severe single attack this gentleman had, except the one which destroyed him, occurred at his dinner, about six months before his death. He had hastily eaten a mutton-chop, and was taking a second, when he was suddenly seized, and was, to all appearance, for a few seconds, dead.

His last attack, in April 1840, occurred also at his dinner, and was attended with no convulsive movement or other symptom, either in character or degree, that had not been noticed in the previous fits; it differed only in its termination.

The body was examined by Mr. Liston and Mr. Ancram thirty-six hours after death, in the presence of Dr. Mitchell and myself.

Mr. Liston's Report.—*Chest.*—Lungs healthy. Heart large. The parietes of the left ventricle rather thin. The lining membrane was much thickened generally. The left auriculo-ventricular opening was rather enlarged, and admitted three fingers very easily. The valves of the aorta were healthy. The lining membrane of the right ventricle was slightly thickened in several places. The right auriculo-ventricular opening was extremely large, and admitted the points of four fingers and thumb. The valves of the pulmonary artery were quite healthy.

Head.—The dura mater was very firmly united throughout its whole extent to the cranium which was dense and unusually thin. There was a large quantity of serum contained in the cavity of the arachnoid. The substance of the brain was slightly congested. It was in other respects perfectly healthy. The medulla oblongata was small in size and extremely firm in consistence. The foramen magnum was altered in shape. The antero-posterior diameter much diminished. The superior part of the odontoid process of the axis appeared to have been pushed back, and somewhat raised above its usual situation. The antero-posterior diameter was so much narrowed that it would not admit of the little finger. The dura mater and ligament covering the posterior part of the body of the axis, were very much thickened. The atlas was in its usual situation, but the articular cavities were firmly ossified to the condyles of the occipital bone, and permitted no motion whatever between the atlas and skull. There was a slight unnatural projection on the lamina on the right side, between the spinous process and articular process of the axis.

No ossification or calcareous deposit was found in any part of the vascular system. The blood was in a fluid state.

The pneumogastric nerves were large, and the middle cervical ganglion of the right side was unusually developed.

In tracing the history of this case we cannot but be struck at the slow development of the symptoms, as bearing connexion with the state of the parts found on dissection; the first fit not occurring till two years after the accident, and death not produced till upwards of five years after the fall.

The injury to the occiput and to the first and second vertebræ at the time of the fall, must have been very great, though insufficient then to cause any visible effect on the functions of the spinal chord.

Inflammation, however, followed, and a consequent thickening of the ligaments, which narrowed the foramen magnum and upper part of the spinal canal, and thus affected the medulla oblongata and upper part of the spinal chord, diminishing the size and increasing the density of these parts.

This gentleman was enabled to ride on horseback until the fits came on, though with caution, and at a slow pace.

He never had paralysis, nor alkelescent urine, but was, during the last three or four years of his life, liable to cold feet and general chilliness. He never, after the first few weeks from the accident, suffered pain in the neck, and his spirits, when he was free from attacks, were excellent, and his general health often very good.—*Medico-Chirurgical Transactions.*

On the Employment of the Chloride of Zinc as an Escharotic, by Alfred M'Clintock, Esq.—"The following cases, in which the chloride of zinc was employed, occurred in the County Louth Infirmary, under the care of Dr. Brunker, by whose permission I am enabled to offer them to the readers of the Dublin Medical Journal. The manner in which the chloride of zinc was used was similar to that employed by M. Conquoin who first introduced this remedy into practice: one part by weight of the chloride, and two parts of flour were mixed together by adding a sufficient quantity of water to form them into a paste; this was spread over the entire surface of the diseased part, care being taken to prevent it coming into contact with the healthy structures in the neighbourhood; a piece of dry lint was then laid on, and lastly, a piece of thin bladder, moistened, was placed over all and secured with strips of adhesive plaster. The patients were confined to their ward but not to bed.

"Case I.—John Maguinness, ætat. 55, a stout, healthy countryman, was admitted 19th May, 1840, with a cancerous tumour, of a globular form, and about the size of a wallnut, situated on the superior part of the pinna of the right ear; states that it began like a wart nearly four years ago, since which time it has gradually been increasing, and has become the source of much pain and annoyance. Its surface presents no peculiarity beyond what is usually observed in cancerous tumors, namely, being rugged, slightly fissured, and of a dirty brown colour, hard to the touch, and firmly attached to the subjacent parts. He got a purgative draught upon admission, and on the following day the paste was applied in the manner already described, over the entire extent of the morbid growth.

"21st. Complains of a great increase of pain, which he says de-

prived him of nearly all rest. No acceleration of pulse—some redness immediately about the base of the tumour.

"22nd. Pain much less, somewhat more redness.

"23rd, 24th. Pain continues to diminish; a small line of separation beginning to form around the attachment of the tumour.

"25th. (Fifth day since application of paste). The slough came away to-day in a dry shrivelled state, except at the surface of the attachment, and bringing with it the entire of the disease. The ulcer left presented a healthy appearance, and was simply dressed with dry lint; the processes of granulation and cicatrization went on very favourably up to the 4th June, at which time he left the hospital; however, only a very small portion of the ulcer remains uncicatrized. The shape and figure of the ear are not, in any way, altered.

"The second case was in a man, ætat. 53, who had an ulcer rather larger than a sixpence, nearly circular, and having rounded edges, its surface smooth and glazed, of a dusky red hue, and destitute of any distinct granulations. It was not painful, and very slow in its progress, and had resisted various treatments. A thin stratum of the chloride of zinc paste was spread over it. During that night and the following day he suffered great pain. The slough separated on the sixth day, leaving a small portion of the bone exposed, the exfoliation of which protracted the healing of the part.

"In the third case the man was 57, of a healthy constitution, having a cancerous tumour on the left side of the nose, of three years' standing. He suffered lancinating pains in it. The base of the tumour was as large as a fourpenny, its surface elevated and convex, of a dirty brown colour, and rough, the attachment to the subjacent parts firm, no discoloration of the surrounding skin. He suffered pain for near three days after the application of the paste, and suffered slight constitutional disturbance, marked by rigor and nausea. The slough separated on the fifth day. The sore was healed on the eighteenth day.

"These two last cases have since been under Mr. M'Clintock's observation, and there has been no return of the disease. He has lost sight of the other case."

In commenting upon the result of the above cases, he remarks:

"1st. That in each of them the application was productive of much pain, which lasted for twenty-four or forty-eight hours, after which it began to diminish.

"2nd. In only one instance, Hanlon's case, were there any symptoms that could be considered indicative of constitutional disturbance, and they were such as generally ussher in an attack of erysipelas; such, however, did not supervene, as these unpleasant symptoms disappeared under the use of simple remedies.

"3rd. In two of the cases the slough separated on the fifth day, and in the other on the sixth. The ulcer left, in each instance, was remarkably healthy, and cicatrized rapidly; so far confirming Dr. Ure's account of this escharotic in the 'Cyclopædia of Practical Surgery' (Art. 'Caustics').

"4th. The action of the chloride in both the cases of cancer was exclusively confined to the morbid structure, and destroyed it to its entire extent. In contemplating these two facts, the conclusion is forced upon our mind, that the chloride of zinc exerts a specific action on the cancerous growth."

Results of Revaccination in the Prussian Army, in the Year 1840, *by* Dr. Lohmeyer.—In the last year there were vaccinated in all the regiments together, 43,522 individuals. On these the cicatrices from previous vaccinations were

distinct in	34573
indistinct in . . .	6177
not discernible in .	2772

The pustules produced by the present vaccinations were

regular in their course in	20952
and irregular in	8820
and no effect at all was produced in .	13750

The vaccinations that had thus taken no effect were repeated,

with success in . .	2831
without success in .	8958

The numbers of genuine pustules produced were as follows:

1 to 5	in	10021
6 to 10	in	5875
11 to 20	in	4171
21 to 30	in	885

Of those who had been successfully vaccinated in 1840, and previously, there were attacked during the past year,

with varicella . .	7
with varioloid . .	2
with true variola .	1

In the past year more frequently than in any other, the vaccination was performed with lymph taken from genuine and regular vaccine pustules on adult persons; for past experience has consequently led military practitioners to be more strongly convinced that for the vaccination of adults, lymph taken from adults is to be preferred to that taken from children, and that it produces a more powerful reaction, and more strongly-developed pustules. And that the pustules thus produced do actually protect from the contagion of small-pox is proved by this, that in the 4th corps, in which the plan has been long followed of vaccinating adults with lymph taken from good pustules in other adults, there has not occurred, during three years, a single case of any variety of small-pox among those in whom the vaccine pustule ran its ordinary course, nor more than one case among those who were unsuccessfully re-vaccinated, although small-pox was more or less rife in the neighbourhood in which the corps was quartered.

The results of past years have shown a regularly increasing ratio in the proportion of successful vaccinations to the number altogether vaccinated; and this increase has continued in the year 1840, for of

43,522 revaccinated, 20,952 have exhibited genuine and regular pustules. Of all the revaccinations, therefore, 48 per cent were successful; while in 1839, the proportion was only 46, in 1838 and 1837 only 45; in 1836, 43; in 1835, 39; in 1834, 37; and in 1833, only 31 per cent. The proportions varied in 1840 between 40 per cent., and 60 per cent., in different regiments.

With respect to the advantage of revaccination as a preventive of small-pox, the experience of 1840 proves it in a striking manner; for during that year there occurred only 74 cases in the whole army, and of these 46 were cases of varicella, 21 of varioloid disease, and only 7 of genuine small-pox. Of the last two proved fatal; and neither of the patients had been revaccinated after his enlistment. In general, just as in former years, most of the cases of spurious and genuine small-pox occurred in recruits soon after their enlistment, and before they had been revaccinnated. Of those who had been revaccinated it has been already stated that only ten were affected, and of these, 7 had varicella, 2 varioloid disease, and only one a genuine variola.—*Medicinische Zeitung*, April 21, 1841.—*British and Foreign Medical Review*, April, 1842.

Results of Revaccination in the Hanoverian Army in the Years 1837–8–9. From the Army Medical Reports, *by* Dr. Muhry.—Since the year 1837 revaccination has been practised in the Hanoverian army, and to such an extent as to include not only those who bore unsatisfactory cicatrices of former vaccinations, or none at all, but all without distinction, and then annually all the recruits. The results, with respect to the susceptibility of the influence of the vaccine matter, were as follows:

In 1837, there were revaccinated, 4610, of whom 351 bore no cicatrices of the former vaccinations.

Of these the vaccination was completely successful in . . 506
incompletely in . . . 916
without influence in . . 3188

In 1838 there were revaccinated, 2699, of whom 187 bore no cicatrices.

Of these the vaccination was completely successful in . . 268
incompletely in . . . 661
without influence in . . 1770

In 1839 there were revaccinated 2057, of whom 143 had no cicatrices.

And of these the vaccination was completely successful in . 294
incompletely in . . . 578
without influence in . . 1175

The whole results, therefore, were as follows, that revaccination in 9366 persons, of whom 681 had no cicatrices, was successful in 1068, or in 11 per cent.; and partially successful in 2155, or in 27 per cent.

The persons revaccinated were for the most part between twenty and twenty-one years old, except in 1837, when about half of them

were more or less further advanced in age. The number of punctures was from eight to sixteen. The matter was chiefly taken from the children* of the married soldiers, and conveyed direct from arm to arm; and when these sources of supply were insufficient, lymph was obtained from children in private practice, or dry lymph was used, or the lymph from those who had been successfully revaccinated. The success was considered complete when, on the seventh day, there was a pustule with a central depression, clear lymph, and an areola. Between that and the mere healing of the puncture there were a variety of intermediate forms, of which papillæ with red margins were reckoned among the cases with no result, and pustules which had crusts formed on the seventh day were reckoned among the incompletely successful cases. The revaccinated were not excused from service unless they were feverish, but that rarely occurred.

On a comparison of these results with those obtained in the Prussian army, and in Wurtemberg, both in the army and among civilians, during an epidemic of variola, Dr. Mühry points out that the proportion of perfectly successful cases varied in some measure. In the Hanoverian army it amounted to more than $\frac{1}{10}$, in the Prussian army it was about $\frac{1}{2}$; in Wurtemberg, in the army, about $\frac{1}{3}$, among civilians nearly $\frac{1}{2}$. The proportion of imperfectly successful cases, on the contrary, was greatest in the Hanoverian army. In it, it was more than $\frac{1}{4}$, in the Prussian army $\frac{1}{6}$, in the Wurtemberg army less than $\frac{1}{4}$, and in the people $\frac{1}{5}$. Taking, however, the completely and incompletely successful cases together, the results were nearly the same in all, the proportions being in the order followed above, $\frac{1}{3}$, $\frac{3}{5}$, $\frac{3}{5}$ and rather more than $\frac{3}{5}$.

Among the confirmations which this report affords of the conclusions arrived at by Professor Heim (Historisch-kritische Darstellung der Pockenseuche) are the following: The cicatrices of former vaccinations afford neither by their number nor by their characters any indication of what will be the result of revaccination. A repetition of revaccination after previous failures not unfrequently produces a complete or incomplete result. The lymph of good pustules after revaccination is in no degree inferior for the purpose of revaccination to the lymph from children. In those who have had variola the susceptibility of revaccination exists in no less a degree than in those who have been vaccinated; for of 112 pitted with small-pox, 16 received complete revaccination, 21 incomplete, and 75 none at all; that is, in nearly the same proportion as among the vaccinated. On the contrary, it appeared that after varioloid disease scarcely any were susceptible of revaccination; for of 34 such who were revaccinated, one only showed any result, and that was imperfect, affording an additional proof that variolois is an actually varioloid disease, a revariola.—*Hannoversche Annalen.* Heft ii. 1840.—*Ibid.*

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* Compare on this subject the remarks in the Report of the Results of Revaccination in the Prussian Army, in which adults were vaccinated with matter from other adults.

Evacuation of Fluid from the Thorax by Means of the common grooved Needle, by Dr. J. C. Prichard.—I was led by accident, some time since, to the method of dawing off fluid in cases of effusion into the thorax, which I have lately found useful in cases of abdominal dropsy. The plan is so simple that I dare say it may be followed already by many persons, but as to others it may not have occurred, I think it right to offer the suggestion through the medium of the *Medical Gazette*. During the use of the common grooved needle for exploring the chest, on ascertaining positively the presence of fluid, previous to paracentesis, it happened on one occasion, at the Bristol Infirmary, that so large a quantity of fluid passed readily through the instrument as to preclude the necessity of any further operation. As paracentesis of the thorax, by means of a trocar, is much more painful than the introduction of the needle, and is sometimes followed by troublesome results, I determined to try for the future whether the same success would follow the use of the latter instrument. In many instances this was found to be the case, but occasionally the fluid was too thick to run off through so small a passage. This was obviated by getting a needle made with a somewhat larger groove. Such a needle has been used with perfect success in every case of the kind that has fallen under my observation during the last year or two, and the number has been considerable. The pain is so slight, that a patient who has once experienced it, totally disregards it, in the desire of that relief which he has obtained, and has called eagerly for a repetition, to which he has submitted as to a trifling annoyance. I have now a patient in the infirmary, a female aged 50, lately affected with ascites. She had been twice tapped by means of the trocar. When she was full a third time, I proposed a third paracentesis. She earnestly deprecated it on account of the pain which she had suffered from the trocar on a former occasion. It occurred to me to try the grooved needle, and it was accordingly passed through the linea alba, and the patient was relieved. It is worthy of note that the effusion of fluid has not returned. The woman, although previously in a state of very broken health, appears now, after the interval of some weeks, to be convalescent. I think it just possible that paracentesis by the needle may be less favourable to a return of effusion in cases of ascites, as it is known to be in those of hydrocele. Whether this may be the fact or not, I am sure that great advantage will arise to patients if the use of the needle be substituted for that of the trocar in tapping both for ascites and for hydrothorax. I am persuaded that the practice of deferring paracentesis in the former disease till all other means, many of which are very exhausting ones, have been long tried, and have entirely failed, is one principal cause of the frequent return of effusion. The use of the needle affords so much greater facility that the operation will cease to be dreaded, and will be performed more easily, and, if so, with more frequent ultimate success.—*Lond. Med. Gazette*, March, 1842.

Moveable Calculus, the Size of a Pistol-bullet, traversing the Trachea and Bronchia.—A very curious case of this kind occurred in the practice of Mr. Ewart, Surgeon, of Alston, the particulars of which are as follow: A young man, 29 years of age, had followed the occupation of a miner for eleven years, during the first nine of which he enjoyed as good health as miners, of his standing, generally do. They are almost all affected with shortness of breath and mucous expectoration loaded with dust. About two years ago this man became affected with more decided fits of dyspnœa, attended sometimes with pain in the left side of the chest. These symptoms gradually increased in severity, especially the pain, which he assigned to a spot apparently corresponding to that part of the left bronchus situated below the arch of the aorta. This pain was aggravated by lying on the left side, or bending the body to the left. He had also fits of palpitation, and a sense of imminent suffocation, produced, as he alleged, by something rising in the lower part of the trachea, and obstructing the entrance of the air into the lungs. He continued, however, to follow his employment till the summer of 1841, when he was seized with acute rheumatism, the thoracic symptoms still continuing unmitigated. The rheumatic fever was subdued by the usual means, after which the stethoscope detected consolidation of the upper portion of the left lung. In the beginning of October last, he was induced one evening to take an emetic, which operated severely. Next morning he was seized with a violent fit of coughing, which continued until he brought up, with suffocating effort, a round ball through the rima glottidis. On examination, it was found to be a globular ball of stone, the size of a pistol-bullet, enclosed in a kind of membranous investment of inspissated mucus. It was found, when sawn into, to be composed principally of sand, and is of very compact texture. The probability is, that this stone was gradually formed by the progressive agglutination of sandy particles, while the man was, during five years, mining in a stratum of similar composition to that ejected from the lungs, and breathing an air containing silicious dust, and stagnant at the same time. After the expulsion of the stone, the man was no longer troubled with palpitation, dyspnœa, or inability to lie on the left side. He felt a soreness, however, in that side, and a sensation which he could not well describe, in the spot originally alluded to. For a short time, his health was much improved. But latterly he is evidently declining, from tuberculous deposits in the lungs, to which he is hereditarily predisposed, and there is no doubt but that he is in an early stage of phthisis. The stone has been forwarded to the editors.—*Med.-Chir. Review*, April, 1842.

Opening Mammary Abscesses and Buboes by Seton, by Mr. Henry James Johnson.—Mr. Johnson made some remarks on this subject to the Society. If there were suppuration in either mammary gland during lactation, the abscess might attain to a very large size before it would come near enough to the surface to present. In such cases one puncture was generally insufficient to evacuate the

whole of the matter; or the opening must be a very large one, which, when closed, would form a large and unsightly scar; or many small punctures might be required, which would put the patient to great pain and distress; or lastly, a seton might be used. Of course, if the abscess were small, or if there were two abscesses, or more, separated by a large amount of healthy glandular structure, it would be useless, or worse, to employ the seton. But a large abscess, or two or more contiguous small ones are adapted for it. In using the seton in these cases, he generally proceeded in the following manner: He made slight pressure over the abscess, to ascertain the lowest depending part of it, and at this point made a moderate incision. Through this he introduced an eyed-probe, armed with a strip of lint, or anything of that sort. The probe was then directed to the opposite border of the abscess, through which the lint would be drawn, and subsequently left in it. By this means the abscess is completely evacuated of its contents, and it ultimately, with proper management, fills up. We are convinced that we have occasionally in this way prevented the necessity for numerous openings in the mamma, and saved the patient from pain, and a tedious succession of abscesses. A similar plan of treatment applies to some cases of bubo.—*Ibid.*

Static Lung Tests.—This paper is the sequel of a former one designed to prove the insufficiency of the static lung tests, or rather of the data hitherto employed in discussing the value of these tests. Thus as regards the weight of the lungs of still-born children, Schmitt makes the maximum as high as 1661 grains, Orfila only 5861; while, as regards the minimum, Haartman, in four still-born children, found the smallest weight 1066 grains, while Lecieux states it at 340. If the various tables of the authors just named, along with those of Jorg, Eisenstein and Zebitsch, Devergie, Taylor, the Procès Verbal, and the author of this paper, be collated, it will be seen that in more than one instance, the maxima in still-born children fall but little short of those of children that have lived one month; while, in one case, the highest number in the still-born greatly exceeds the highest in those born alive. The author points out the serious inconveniences to which such discrepancies may lead in medico-legal investigations.

Ploucquet's test, or that which is drawn from the weight of the lungs as compared with that of the rest of the body, has some advantages over the one founded on the absolute weight of the former, inasmuch as the results seem more uniform.

The following are the general conclusions of this valuable paper:

"*Weight of the Lungs*—1. The weight of the lungs of still-born children of the same age varies within wide limits; the chief causes of difference being the sex and the weight of the body.

"2. The weight of the lungs in mature still-born children is as follows: greatest weight, 1661; least weight, 340; average weight, 874.

"3. The weight of the lungs in mature still-born children of the

male and female sex respectively is as follows: greatest weight, 1661, 1492; least weight, 360, 340, average weight, 950, 809.

"4. The weight of the lungs in children who have respired also varies within wide limits; the chief causes of difference, in addition to those which affect still-born children, being the degree and duration of respiration.

"5. In children who have survived their birth one month or less, the highest recorded weight is 2440 grains; the lowest 432 grains; and the average 1072 grains.

"6. The weight of the lungs for males and females respectively, at the same ages, is as follows: greatest weight, 2440, 1745; least weight, 432, 479; average weight, 1121, 982.

"7. The weight of the lungs increases with the increasing perfection of the respiration, but is very slightly augmented by imperfect respiration.

"8. The weight of the lungs also increases with the duration of the respiration, but appears to be less when respiration has continued more than one hour and less than twelve, than when it has lasted less than one hour.

"9. The mean weight of the lungs in mature children who have lived one month or less exceeds the mean weight in mature still-born children by somewhat less than one-fourth, the numbers being 574 and 1072.

"10. The average and extreme values drawn from small numbers of facts differ widely from each other, and cannot be depended upon for medico-legal purposes.

"11. The average values cannot be safely employed as standards of comparison, and the extreme values admit of very rare application.

"12. If the absolute weight of the lungs is employed as a test of respiration, the value obtained in an individual case ought to be compared with the average or extreme numbers obtained for the same weight of body.

"The following propositions have an important bearing on Ploucquet's Test:

"1. The weight of the lungs both before and after respiration increases with the weight of the body; but the proportion which the lungs bear to the body decreases as the weight of the body increases.

"2. For the same weight of body the weight of the lungs varies within wide limits, and *vice versa*, for the same weight of lungs the weight of the body varies within wide limits. This variation is more considerable after respiration than before it.

"3. The weight of the body in still-born children is greater than in children born alive; the former exceeding the latter by nearly one-third.

"4. The weight of the lungs is subject to much greater variation than that of the body.

"5. The weight of the lungs is much greater in the male than in the female.

"1. *Ploucquet's Test.* The proportion which the weight of the

lungs bears to that of the body, like the absolute weight of the lungs, varies within wide limits; the proportion in mature still-born children being as follows: greatest proportion, 1:24; least proportion, 1:176; average proportion, 1:57.

"2. The proportion in males and females respectively is as follows: greatest proportion, 1:24, 1:36; least proportion, 1:176, 1:119; average proportion, 1:53, 1:63.

"3. In children who have survived their birth one month or less, the highest recorded proportion is 1:19; the lowest, 1:132; and the average, 1:38.

"4. The proportion for males and females respectively at the same ages is as follows: greatest proportion, 1:19, 1:19; least proportion, 1:132, 1:96; average proportion, 1:35, 1:43.

"5. The proportion which the lungs bear to the body increases with the increasing perfection of the respiration, but is very slightly augmented by imperfect respiration.

"6. The proportion also increases with the duration of the respiration, but appears to be less when respiration has continued more than one hour and less than twelve, than when it has lasted less than one hour.

"7. The average proportion in mature children, who have lived one month or less, exceeds that in mature still-born children; the numbers being 1:57 before respiration, and 1:38 after respiration.

"8. The proportions calculated from a small number of facts differ widely from each other, and cannot be depended upon for medico-legal purposes.

"9. The average proportions cannot be safely employed as standards of comparison, and the extreme values, though more to be depended on than the highest and lowest weight of the lungs, are of very limited application.

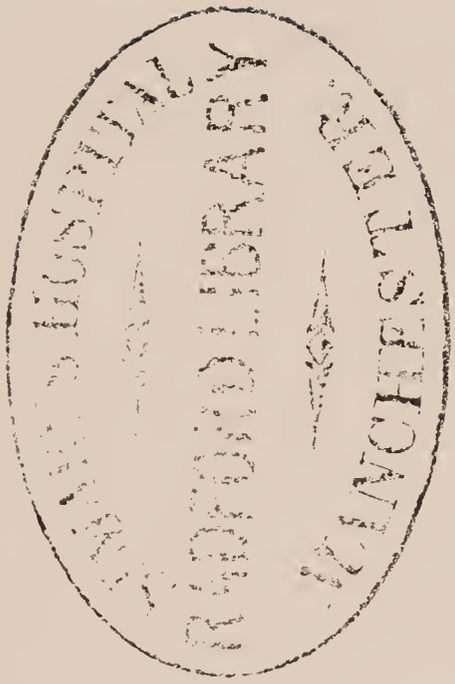
"10. If the average or extreme proportions are employed as standards of comparison, the proportion obtained in any individual case must be compared with the average or extreme numbers calculated for the same weight of body."

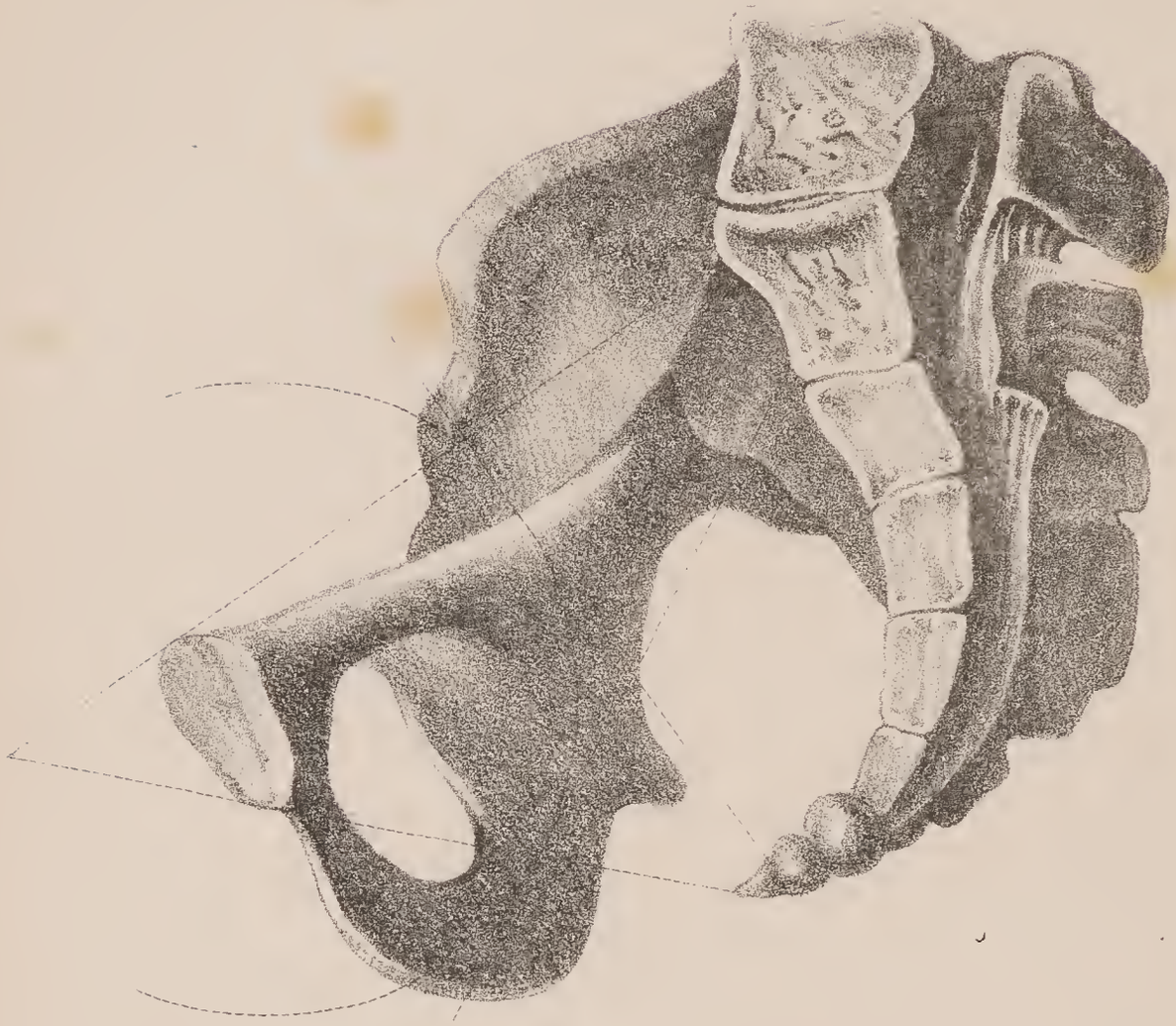
The observations contained in the present essay lend strong confirmation to the unfavourable opinion expressed on a former occasion of the static-lung tests as tests of respiration. Whether employed to distinguish respiration from non-respiration, or respiration from inflation, they are alike insufficient, except in cases of extremely rare occurrence, where we can make use of the extreme values. On the supposition that the question of inflation has no place, the static-lung tests are as unnecessary as they are useless; if we have proved that either respiration or inflation has taken place, they can only be employed with advantage in the extremely rare instances just alluded to, viz., where we can employ the extreme values. Hence, then, the proposition which concludes my first essay requires to be slightly modified, and will stand thus:

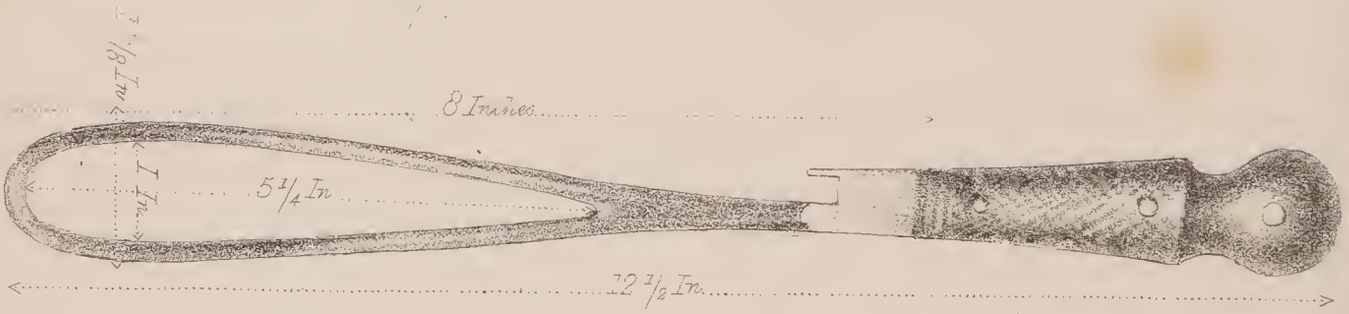
"The static-lung tests are utterly useless for all practical purposes, and ought not to be relied on in medico-legal inquiries, except in rare instances, where the extreme values can be employed."—Dr. Guy, *Edin. Med. and Surg. Journal*, No. cl. Jan. 1, 1842.

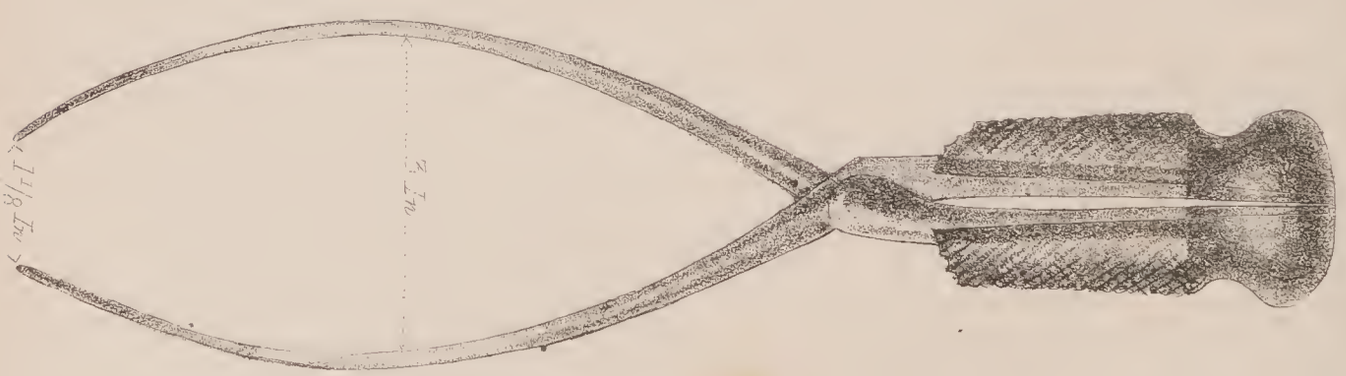
On Inflammation of the Mucous Follicles of the Vulva and its Treatment. By M. A. Robert.—This affection frequently accompanies blenorrhagia, or occurs in women who suffer from sub-acute inflammations of the mucous membrane of the uterus, or is induced by pregnancy or abortion, or appears as a consequence of derangements of the menses. The chief seat of the inflammation in these cases is to be found in those two large mucous follicles situated at the entrance of the vagina, and known by the name of the glands of Duverney, or of Bartholinus. Its chief symptoms are a darting pain and distressing pruritus at the vulva, aggravated by all the patient's movements, and especially by sexual intercourse. Considerable redness is observable at the entrance of the vagina; sometimes especially obvious at the two points which correspond to the openings of the mucous follicles, from which pus can usually be squeezed by light pressure. The nature of the affection is frequently mistaken by practitioners, who sometimes attribute the itching to the irritation of the mucous membrane of the vagina from habitual leucorrhea; others conceive it to be a form of porrigo, or look on it as the consequence of syphilitic infection. Nothing, however, is easier than its cure when the real nature of the affection has been ascertained. It consists in introducing one of Anel's stylets into the follicle, then laying its cavity open by means of a pair of probe-pointed scissors, and cauterizing its internal surface with nitrate of silver. The operation, though painful, is never dangerous, and is always succeeded by a complete cure, provided the whole of the follicle has been destroyed; but when this has not been effected, a repetition of the operation may become necessary. Some cases are detailed in illustration of the benefits of this procedure, where the patient had suffered from the affection for years, and undergone a variety of treatment without effect. —*Bulletin Général de Therapeutique*, Sept. 30, 1841.—*British and Foreign Medical Review*, April, 1842.

On Iodine Injections in the Treatment of Serous Cysts, by M. Velpeau.—M. Velpeau was induced, by the success which attended the use of this means in the treatment of hydrocele, to adopt it for various kinds of serous cysts, enlarged bursæ, &c., about the knee, in the axilla, breast, neck, and other parts. The proceeding consists in puncturing the cyst with a trocar proportioned to its size, emptying it, and then injecting through the canula a mixture of one part of tincture of iodine with two parts of water. This having been retained for a few seconds, should then be nearly all drawn off again. The pain produced by this operation is generally inconsiderable, and ceases after about a quarter of an hour; a day or two after reaction takes place the cyst inflames, though never severely; in two or three days more, resolution commences, the cyst diminishes, grows pale, shrivels, and in two, four, or six weeks the cure is perfected. It is rarely delayed beyond this time, but it may be accelerated by rubbing the skin over the cyst with mercurial or iodine ointment when all the signs of acute inflammation in it have passed away.—*Bulletin Général de Therapeutique*, Nov. 1841.—*Ibid.*









Lith. of Dr. Beatty's paper on the Forceps.

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1 JULY, 1842.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*Contributions to Midwifery, No. IV. Cases illustrative of the Use of the Forceps.* By THOMAS EDWARD BEATTY, M. D., Professor of Midwifery to the Royal College of Surgeons in Ireland; Consulting Accoucheur to the City of Dublin and Victoria Lying-in Hospitals, &c. &c.

I HAVE adopted the title prefixed to this paper, because it is intended to contain a detail of some cases of difficult labour, in which the *use* of the forceps is, in my mind, clearly shown. By the term use, I mean its beneficial employment where great danger threatened both mother and child; and I wish it to stand in strong contrast with *abuse*, to which this instrument, in common with every other valuable agent employed in medicine, is exposed.

In all branches of the healing art, mechanical assistance is employed only in cases where it is deemed necessary for the relief of our patient. What well educated surgeon would employ pulleys to reduce a dislocation, if he could replace the bone with his hands? Who would pass a catheter into the bladder,

if he could as speedily and safely relieve retention of urine without it? Who would have recourse to the scalpel in strangulated hernia, if by the taxis, &c., he could rescue his patient from danger? The surgeon does not employ pulleys, catheter, and knife, because he *can* use them, but because he knows they are necessary for the well-being of the sufferer under his care. A similar rule is applicable to all instrumental interference in the practice of midwifery, it should always be the *dernier resort.* We do not employ artificial aid simply because we have an opportunity of doing so; but because the circumstances of the particular case before us demand such assistance. "A prudent use of instruments in the practice of midwifery is of great importance; but the necessity alone of freeing our patient from impending or present danger, should induce us to resort to them."* This sentence should be engraven on the mind of every practitioner; and it will appear that in the cases I am about to relate, the practice adopted was founded on similar principles.

"Impending or present danger." Two questions here present themselves: 1st. What are the dangers to be feared in difficult labours? 2nd. How do we know them to be impending or present? Upon an intimate acquaintance with the true solution of these questions, depends the difference between the well-informed, reflecting, experienced accoucheur, and the ignorant, reckless empiric. There is no term more abused than "*experience,*" as it is frequently applied to medical men. It is no proof of experience that one has attended a vast number of cases of any particular disease, of fever for example; a physician may have seen many persons recover, and others die of this malady during a long practice; and yet, for want of observation and reflection, be totally devoid of experience; just as a traveller may pass from St. Petersburgh to Constantinople, and, from a similar cause, be no wiser at the end of his journey. So

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* Collins' Pract. Treat., p. 9.

it is in midwifery; he alone who studies the phenomena of natural labour in all its phases, and observes, compares, and treasures in his memory, the ever varying course of this natural function, under different circumstances, in different constitutions, he alone is to be considered experienced, and can judge of the symptoms indicative of danger in any given case.

In studying the phenomena of labour, there are five principal subjects for consideration: 1st. The moving power. 2nd. The body to be moved. 3rd. The channel of exit. 4th. The materials lining that channel. 5th. The constitutional temperament of the patient. It is well known that in the majority of instances, such a harmony exists between these several objects, as to secure the safe termination of the process; but any deviation from the proper proportion that 1, 2 and 3 bear to each other, is productive of either delay or difficulty in the delivery. Thus a deficiency in No. 1 (the contractile power of the uterus) may, while Nos. 2 and 3 (the fœtus and pelvis) are of normal dimensions, be the sole cause of protracted labour. It is certainly erroneous, to place such a case as this under the head of difficult labours, as has been done by Denman. There is here no difficulty to be overcome, the delay arises from the want of the *vis a tergo*. Neither the patient nor her child are exposed to danger from the tediousness of the labour, and this leads to an important caution against judging of the danger of a case from the time it occupies. We should always bear in mind the difference between delay and difficulty. Delay implies deficiency in the moving power, while difficulty suggests the idea of an abnormal condition of Nos. 2 and 3, either an excess in the dimensions of the fœtus, or a diminution in the capacity of the pelvis. Now, while simple delay is seldom productive of bad results, and is usually remediable by appropriate treatment; difficulty arising, as I have said, from mechanical obstruction, resisting the energetic action of the expulsive force always induces danger.

This leads us back to the first question proposed What are the dangers to be feared in difficult labours? Before this question is answered, it will be necessary to make a few observations upon the fourth and fifth subjects for consideration, viz., the materials lining the channel of exit, and the constitutional temperament of our patient.

It should be always borne in mind, that in every case of labour, there are a great number, and a great variety of important parts, intervening between the head of the child and the bony parietes of the pelvis. There is first the cervix, and os uteri, together with the vagina, which, with the mucous membrane common to all, form the innermost layer. These are parts endowed at this particular period with a high degree of organization; the blood-vessels especially being of much greater size than in the unimpregnated state. Outside this layer, there is at the upper and back part, the cul de sac of the peritoneum, dipping down between the rectum and back of the uterus and vagina. This membrane does not descend so low in the pelvis during the latter part of gestation, as it does previous to impregnation, but during labour it follows the descent of the cervix uteri, and will be found below the level of the promontory of the sacrum. That it is so is manifest in those cases where laceration takes place, as it so frequently does, at the junction of the vagina and uterus, or at the lowest part of the posterior surface of the latter organ; in all of which cases, the rupture extends into the cavity of the peritoneum. It may be a question, whether the vomiting that occurs in the advanced stage of difficult labour, and the tenderness of the abdomen that accompanies it, may not be partly produced by pressure of this fold of the serous membrane against the promontory of the sacrum, just as similar symptoms arise when it is subjected to pressure in strangulated omental hernia. The anterior surface of the vagina is in close contact with the back of the urinary bladder, and the urethra; with which parts it is intimately united. Along the sides of the vagina, and loosely connected with it by cellular

tissue, we have the funnel-shaped muscular sling, constituted of the levator ani muscles; and external to these muscles are found anteriorly the obturator internus, and posteriorly the pyriformis muscles. Along the back of the vagina runs the rectum; and in addition to these parts, there are the internal iliac arteries and veins, with their several branches, the uterine nerves; and the roots of the great sciatic nerves, with the obturator nerve before. All these, with the several fasciæ, and the cellular tissue that surrounds them, form a soft lining to the pelvis, along whose cavity the head is propelled in labour. We should never lose sight of the fact, that such a combination of living tissues is interposed between the solid unyielding walls of the pelvis and the fœtus, during parturition.

The last subject for consideration, and not the least important in a practical point of view, is, the constitutional temperament of the patient. To those who are extensively occupied in the practice of midwifery it will not be necessary to insist upon the vast variety of constitutions that we encounter; nor upon the influence that this diversity exercises over the powers of endurance in different patients. But it is always necessary to impress upon the minds of students, that labour is not a process performed by inanimate machinery, but that it is a complex function discharged by living tissues, whose properties and energies are regulated by the peculiar temperament of individuals. Thus we see some patients sink under a labour, which, for severity and length of duration, is not to be compared to what others will endure with perfect safety; and hence we are led to discard time alone as a measure of danger. Some patients are prone to inflammatory action, phlegmonous, or erysipelatous, as the case may be; others are endowed with a nervous energy, originally deficient, or easily exhausted; and others again are of a sluggish habit, that pervades every organ, and require stimulants to rouse their dormant powers; while a fourth class, in whom hysteria prevails, have all their functions so modified by this protean malady, as to baffle attempts at accurate description, and

require the greatest skill for their management. These are but a few of the modifications of temperament that might be enumerated, but they are sufficient to show any reflecting mind, that we are not to expect uniformity of phenomena in labour, or similarity of effects from apparently similar causes.

We are now in a predicament to answer the question—What are the dangers to be feared in difficult labours? They are threefold: 1st. The death of the mother, or the child, or both, before delivery. 2nd. The death of the mother after delivery. 3rd. Inflammation, terminating in abscess or sloughing of the soft parts within the pelvis, and producing effects fatal to the future comfort of the patient. The life of the mother may be sacrificed from two causes before the labour is terminated; either by actual exhaustion, produced by the combination of prolonged pain and exertion; or by rupture of the uterus or vagina; in either of which cases, the fate of the child most commonly corresponds with that of the parent. And, when the mother survives delivery, it is notorious, that the pressure to which the infant has been subjected, is too frequently sufficient to destroy it before it is born. The death of the mother after delivery may follow in consequence of rupture of the uterus, or of collapse, or of the effects of inflammation excited in the soft parts lining the pelvis; and this, probably, after a dead child has been delivered. Or, if the effects of inflammation are not sufficient to destroy her life, she is exposed (having most likely given birth to a still-born infant) to the danger of sloughing of the vagina, whereby constriction or obliteration of that canal is produced, or the more lamentable consequence, sloughing of the back of the bladder, and urinary fistula; rendering her for life a loathsome victim of erroneous practice. Such are some of the dangers to which women and their offspring are exposed in difficult labour; no light risks, it will be admitted, and such as every practitioner is bound, if possible, to avert. But in order to avert, he must foresee them; he must perceive that danger is impending. This involves the second question.

How do we know danger to be impending or present? We have, in the condition of our patient, sufficient evidence of the approach or existence of all these sources of danger, except rupture of the uterus; and we should always bear in mind the possibility of the occurrence of this accident in every case of difficult labour. The term *exhaustion* explains the condition meant to be implied by it; muscular irritability and nervous energy are expended, all capacity for further exertion is at an end; the powers of life seem failing, and the mind as much depressed as the body, they would both sink together, unless relieved by artificial assistance. But before the patient has arrived at this formidable condition, into which the attendant should never allow her to fall, there is a train of symptoms exhibited in the case, sufficiently indicative of danger. These are so well and so concisely laid down by Dr. Merriman that I will take the liberty of transcribing them from his variable synopsis. "1. Severe shivering fits, unconnected with dilatation of the os uteri, or the passage of the head through the *os externum*. 2. Frequent or constant vomitings after the os uteri is largely dilated. 3. The accession of fever indicated by a quick pulse, a furred tongue, a hot dry skin, and great thirst. 4. Great restlessness or jactitation. 5. An anxious and disturbed mind. A disposition to sing in a plaintive and wailing tone of voice, has in particular been considered as a very frightful symptom. 6. The want of true uterine action, though there may be irregular and unproductive pains. When this happens after many hours of labour it is always an unfavourable symptom. 7. Great heat and soreness in the vagina and os uteri. 8. The discharges from the uterus and vagina being offensive both in colour and smell. 9. Violent and continual pain, and soreness or tenderness of the belly, increased upon pressure. 10. Low, muttering delirium. 11. A quick and weak, or low, sinking pulse. 12. Clammy sweats. In proportion to the number and severity of these symptoms will be the danger of the patient; it becomes the duty of the practitioner, therefore, to combat, by appropriate remedies, each of these symptoms as

they arise; but if several are present at once, unless artificial aid be timely afforded to deliver the patient, both mother and child will perish." The second danger mentioned above is, the death of the mother after delivery. This may happen from collapse or exhaustion, but is most frequently caused either by rupture of the uterus, or inflammation of the soft tissues, the result of the mechanical violence offered to them by the prolonged pressure of the head of the child. Some, or all of the symptoms just mentioned, will be observed in such cases during labour; and they will also be found to attend those protracted labours in which, although the life of the mother is spared, the local mischief that ensues bears ample testimony to the injury inflicted. In judging of the means best calculated to rescue two living beings from such dangers, it should be recollected, that it is the *continuance* of the pressure that does the mischief rather than its intensity. We know that the soft tissues of the body are endowed with a resiliency, a power of resistance that enables them to bear a temporary compression of great amount without injury, while inferior pressure continued for a length of time will terminate in their disorganization. The malingering soldier is well aware of this fact and acts upon it when he wishes to produce an ulcer. He straps a piece of coin or other hard substance tightly upon the part. At first no effect is produced, and if the apparatus is removed in a short time, there is no evil consequence; but if the same amount of pressure is continued for some hours, such a degree of injury is inflicted as terminates in the destruction of the part, and a sloughing ulcer is the result.

Bearing this physiological fact in mind, we should be always cautious how we permit the soft parts in the pelvis to be subjected to continued pressure, after we have evidence that there is an arrest to the progress of the head through its cavity, or that delivery by the natural efforts is either impossible, or so remote as to be improbable, while at the same time the local and constitutional symptoms already detailed give warning of

impending danger. We should be cautious, I say, on this point, with reference to the mother; and we should never lose sight of the fact, that we have a living infant also in our charge. Its life depends upon the progress of the labour. Its head will bear a very considerable amount of compression for a short time, but there is a limit to such endurance. The exact period at which pressure becomes incompatible with fœtal life, is difficult to determine in any given case; but I think it may fairly be presumed, that the amount of pressure capable of producing dangerous symptoms in the mother, must, at the same time, operate prejudicially on the child, and if not removed will soon terminate its existence. I very much fear that this is a point too much overlooked by practitioners and writers on midwifery; the safety of the mother is kept too exclusively in view, and the fate of the infant is too often neglected. This carelessness about the life of the child may suit the views of certain political economists, to whom the diminution of the human race may be an object greatly desired; but the conscientious practitioner should remember that there are different modes of infringing the sixth article of the decalogue; he should recollect that acts of omission are as criminal as acts of commission, and that allowing a fellow-creature to remain in a perilous situation until life is sacrificed, while he had the means of rescuing him from his danger, will as surely rise up in judgment against him as if by his own hand he had dealt the fatal blow.

The inference to be drawn from these observations is, that where we have evidence that the continuance of labour is attended with danger to mother or child; or, as is most commonly the case, to both, we are bound to afford such assistance as will, without hurt to either, place both in a state of safety. But let no one pretend to judge of the necessity for artificial interference, who has not fully and carefully studied the phenomena of labour. It is from symptoms he is to draw his conclusion, and if he is not thoroughly conversant with those indicative of danger his opinion must be ill-founded, and his practice rash and em-

pirical. And here I would urge upon the attention of the reader the observations made upon this point several years ago, by my late father. "It is of importance that every man practising midwifery should avoid as much as possible the use of instruments in delivery; for it is certain that if he suffers his patience to be too readily exhausted, or yields too easily to the suggestions and alarm of the patient or her friends, he will frequently be induced to promote delivery too soon, very much to the injury of the patient, and consequently of his own character. On the other hand, he has an important duty to perform, in judging of the necessity, and the proper time for using instruments, and the kind suited to each particular case; for as much, or more mischief may be done by delaying their use when absolutely required as by having recourse to them too soon. In fact in this, as in most other situations, the man who has patience to watch, judgment to discriminate, and firmness to act, will be the best qualified to perform the duties required of him."*

In the observations that follow I wish it to be understood, that I omit the consideration of those cases in which the capacity of the pelvis is so much diminished by malformation, tumours, &c., as to render the passage of an entire child impossible; and that I will allude only to the more common cases of difficult labour, in which, after several hours of severe pain, the head has been forced to a greater or less extent into the cavity of the pelvis, and is then arrested. When matters have arrived at that state, the practitioner's mind becomes alive to the dangers that may ensue. If some favourable change does not take place, the signals of distress will soon be exhibited, but with a rapidity, varying in different cases, from diversity of temperament. The pulse will become fast, the skin hot, the belly tender, the vagina hot, and the stomach irritable. These are signs which we know indicate impending or present danger: danger to the mother and

* Dub. Med. Trans., New Series, vol. i. part i. p. 41.

danger to the child. Knowing this, is it not our duty to avert them? Who, if he could, would not with a word terminate such a labour at such a time? Who would not wish to possess the means of shortening the agony and danger of his patient and her offspring? Leave her unassisted, and what have we to expect? a protraction of suffering, an aggravation of danger to the mother, and death to the child. That we have a safe and efficient means of averting these, by the careful use of well-constructed forceps, will appear in the detail of the following cases. And here I would observe, that all the operations which it has fallen to my lot to perform with the forceps are here set forth; there are none concealed. I have not selected cases favourable to my views, and left the unfavourable ones behind in my note-book; but all are given, and all are favourable. I look upon this fact as most important, because it is likely that if the lacerations, contusions, and other evil consequences that haunt the imagination of some practitioners, were actually attendant on the operation, it is likely, I say, that I would have encountered some of them; it is not probable that such good luck would have been constant in my hands, and that all my patients would have escaped.

Case I.—Age 36; seventh pregnancy. All her former labours had been very long and difficult, and in two of them the children had been still-born. The labour set in strongly, and the os uteri dilated slowly. It yielded after twenty-four hours had elapsed, and the head entered the brim of the pelvis. The pains continued strong during the ensuing twelve hours, and the head was slightly advanced during that time. At the end of this period, being thirty-six hours from the commencement of labour, the pulse became a little accelerated; but as there was some continuing advance of the head, the labour was allowed to proceed. In six hours thereafter the head had passed to the extent of about two-thirds through the brim of the pelvis, and appeared tightly jammed in the aperture. The patient's pulse was still faster than before, but no tenderness of the belly was complained

of. Her strength being good, and the pains regular, it was not judged necessary to interfere; but at the end of forty-eight hours from the beginning of labour unfavourable symptoms had fully appeared. Her pulse was now 120; the pains had greatly diminished; her strength was failing; and she suffered considerable pain on pressing the abdomen. Her stomach had become irritable, and rejected her drinks. Under these circumstances the forceps were applied. It required some care and patience to get the blades of the instrument into their place; but at last this was accomplished, and by slow degrees, and well graduated lateral motion of the instrument, the head was dislodged from its position, and brought down to press upon the perinæum. The rest of the operation was sufficiently easy. The child was extracted still-born. This woman suffered a good deal from inflammation of the vagina, which was subdued by fomentations, injections, and poultices, but no sloughing took place. She left the hospital in a fortnight quite well. I regretted at the time, and still continue to do so, that I had not performed the operation at the end of thirty-six hours, instead of waiting to forty-eight, as I have no doubt the inflammation of the vagina would have been prevented thereby, and decidedly the child would have had a much better chance of being born alive.

Case II.—Age 28 years; seventh pregnancy. This woman had borne six children, in the delivery of which she had always difficult labour, and the last child had been extracted by the perforator and crotchet by another practitioner. In this labour the head presented in the first position, and it was evident that the brim of the pelvis was somewhat diminished in its antero-posterior diameter. A considerable opposition to delivery, also, arose in this case from a convergence of the spinous processes of the ossa ischia, which encroached upon the cavity of the pelvis, and resisted the passage of the head. At the end of twenty-four hours, finding from these two causes the progress of delivery was impeded, the head having come down to rest upon the spinous processes below, while the remaining portion was engaged

in the brim of the pelvis; perceiving that there was little prospect of delivery being accomplished by the natural efforts; and having the former labours as a guide as to what was to be expected, I determined not to wait too long without attempting to rescue the infant from its perilous situation, if it were consistent with the mother's safety. Accordingly the forceps was cautiously introduced, and as cautiously used as an extractor; and in half an hour from the commencement of the operation, I was gratified by the birth of a living boy, who with his mother continued to do well, until they left the Hospital on the tenth day.

Case III.—Age 36 years; ninth pregnancy. In this case the head presented in the fourth position of Naegele; and instead of changing to the first in the course of the labour, as it usually does in this presentation, it continued to descend with the anterior fontanelle towards the pubis. At the end of twenty-four hours (labour being very severe) the head was firmly fixed in the pelvis, and in six hours more (thirty) finding that no advance had taken place, and the vagina was becoming tender to the touch, while the pulse was gradually increasing in frequency, delivery was effected by the forceps. The child was dead. This patient recovered without any unpleasant symptom.

Case IV.—Age 30 years; fourth pregnancy. This was a footling presentation, and the labour went on without anything remarkable, until the arms had been extracted, when great difficulty was found in the passage of the head. The labour pains continued strong, and the cord pulsated for a considerable time during the endeavours made to extricate the head. But all attempts to accomplish this in the ordinary way having been tried for nearly half an hour, and failed; and finding the pulsation in the funis becoming weak, I determined upon using the forceps. Unfortunately some delay took place in procuring the instrument, which was fatal to the infant; for, before its arrival, the cord had ceased to pulsate. I passed the blades along the sides of the face and head, having the body of the infant carried forward between the thighs of the mother, and with some diffi-

culty I succeeded in extracting the head. The mother did well.

All these cases occurred in women who had previously borne children; but I now come to a class of patients in which the employment of the instrument is by some deemed inadmissible and improper. I allude to women in labour of first children, and it will be seen by the sequel whether the dread of the instrument in such case is well founded or not.

Case V.—Age 25 years; first pregnancy. The head presented in the first position, and the labour progressed steadily and slowly, so that at the end of twenty-four hours the os uteri was completely dilated, and a portion of the child's head had entered the brim of the pelvis. The pains continued severe and constant, and at the end of thirty hours the greatest portion of the bulk of the head had passed into the cavity of the pelvis, but not so low as to fill the hollow of the sacrum or make any pressure on the perinæum.

From this time there was no advance in the progress of the head, but a very large tumour formed on the scalp. In this condition the head remained for six hours, notwithstanding frequent and strong pains. The woman was now thirty-six hours in strong labour. It was plain that the natural efforts were unequal to overcome the difficulty. The pulse had risen to 110, and great restlessness had commenced. By the stethoscope the child was found to be alive; but how long it would remain so under such severe pressure was very doubtful. I therefore determined to give it a chance for life. The forceps were applied slowly and cautiously; and when introduced the blades lay one behind the pubis, the other along the sacrum. This shews the position of the head; that it had not turned from the oblique position. By grasping the handles loosely, and swaying them back and forward, two or three times during each pain, without as yet using much extracting force, I loosened the head in its position; and then gradually caused it to descend, and in twenty minutes a living boy was delivered without a single fibre of the

perinæum having been damaged; a careful assistant having duly supported that part. The mother and child left the Hospital the same day.

Case VI.—Age 24 years; first pregnancy. This case was very similar to the one just described, with this difference, however, that in the present one, labour was allowed to proceed for forty-eight hours before the operation was performed, whereas the former was delivered at the end of thirty-six hours. The reason was, that urgent symptoms of danger did not manifest themselves as soon as in the former instance. The pulse kept moderate until within a few hours of the time at which she was delivered; and the os uteri which was very slow in dilating had not permitted the head to pass through until nearly twenty-four hours had elapsed. From that time a slow advance of the head took place, but at the end of thirty-six hours not more than one-half of it had been forced through, and from that time little progress was made, notwithstanding strong and regular pains continued. Still as no unpleasant constitutional or local symptoms were present, I contented myself by watching the case. In a few hours the patient's strength began to decline, and her pulse rose to 110; the vagina at the same time began to lose the cool, moist feel it had hitherto preserved, and to become hot and dry. When matters had assumed this form, I felt that I was no longer justified in withholding assistance, and finding the child to be still alive, I determined on using the forceps. By steady and cautious management, I was able to apply the instrument, and I succeeded in delivering a living girl. They both left the Hospital well on the twelfth day.

Case VII.—Age 20; first pregnancy. In this case the necessity for the employment of the forceps arose from the patient having been seized with convulsions in the latter end of the second stage of labour. The pains were strong and effective, the os uteri dilated in four hours, and in six hours most of the head had passed through the brim of the pelvis. At the expiration of sixteen hours the head had made no advance; the perinæum

was very rigid, and the vagina dry. The patient being of a plethoric habit, she was bled to ℥xvj. with decided benefit, for soon afterwards the vagina and perinæum became cool and relaxed. At the end of twenty-four hours the head had come down to touch the perinæum, but did not as yet press upon it. In four hours more, when at each pain the head was forcibly distending the perinæum, the patient was seized with convulsions. Delivery by the forceps was instantly had recourse to; and much difficulty was experienced in the operation, owing to the restless state of the woman, and the great size of the infant's head, which was found to measure four inches between the parietal protuberances. The child, as is most usual in convulsions, was born dead. The mother recovered and left the hospital well.

The remaining cases occurred in my private practice.

Case VIII.—Age 22 years; first pregnancy. This lady was sixteen hours in labour before I was sent for. She was attended by an intelligent midwife. I was called to her in consequence of retention of urine, none having been passed for fourteen hours. I found the head on the perinæum, which it distended at each pain; the external parts were relaxed. The pains very weak, and few in number. Pulse 75. I passed the catheter, and drew off 1½ pint of water; gave a drachm of ergot in divided doses, and left the patient in the hands of her attendant, expecting that delivery would soon take place. I was surprised to get a message nine hours afterwards requiring my attendance again. I found her just in the same state that I had left her, with the exception of a more accelerated pulse, more exhaustion, and irritable stomach. I at once delivered her, with the forceps, of a very large still-born boy. The mother speedily recovered.

Case IX.—Age 32; first pregnancy. Labour commenced about four o'clock in the evening, and the pains continued during the night and following day without interruption. In the course of the second night the pains became violent, and Dr.

Guinness, of Clontarf, was sent for to see her; she having been previously under the care of a midwife of much experience. He saw the patient at four o'clock, A.M. He found the os uteri not dilated, and the pains most violent and distressing. At his desire I was sent for, and saw her at half-past eleven o'clock, A. M. I found the os uteri then dilated to the size of a half-crown piece, not very thick, but exceedingly rigid. The waters had been discharged spontaneously in the course of the morning. The pains were violent and frequent; in fact, there seemed to be no intermission, and no impression seemed to be made on the os uteri. There was great irritability and impatience; flushed countenance; hot skin; pulse 80. We agreed that it would be advisable to take some blood from her arm. This was accordingly done to the extent of ℥xviij. with decided relief. The character of the pain was immediately altered. It became more regular and natural, and there was an intermission or suspension from time to time between the pains.

An emollient enema was now administered. At one o'clock the os uteri was felt soft and yielding; the head of the child still above the brim of the pelvis. At three o'clock the os uteri was completely dilated, and about one-half of the head had passed through the brim, in the second position. The pains were violent and frequent. At four o'clock no advance of the head had taken place; but a very large tumour had formed upon it. The bones felt remarkably firm; the external parts were well relaxed; pulse 110; restlessness and impatience to a great degree, so much so that it was difficult to keep the patient in bed. The child was ascertained to be alive. Seeing that the patient was now forty-eight hours in labour, during the whole of which time it had been most violent; that there was little prospect of the labour being concluded by the natural efforts, or at most that such an event was very remote, and that from the present condition of the patient, it was probable, indeed almost certain, that most dangerous symptoms must arise before it could take place; seeing that the child was now alive, but that from the manner

in which its head was embraced by the pelvis, and the length of time that must be spent in fruitless efforts to dislodge it by the unassisted efforts of the uterus, its death before delivery was in the highest degree probable; seeing all these circumstances, I say, we agreed that an attempt should be made to deliver her by the forceps. The blades were introduced, slow, swaying traction was employed during a pain, and in ten minutes the head was so dislodged as to come down to, and press upon the perinæum. I now withdrew the instrument, and allowed the uterus to accomplish the remainder of the delivery; this was happily effected in a few minutes, and a living boy was born, without the least injury to mother or child.

I fancy there is no one will object to this case, as illustrative of the *use* of the forceps. What would any one predict of the case at four o'clock? What were the dangers? What was the result?

Case X.—Age 34; first pregnancy. At eleven o'clock, A. M. while sitting in her drawing room, the membranes ruptured without any pain, and the waters commenced to escape. I saw her at two o'clock, P. M. No pain had then occurred. The os uteri was very high in the pelvis, and dilated just sufficiently to enable the finger to pass through, The head could be reached with difficulty, and the scalp was found wrinkled and doughy. She remained all that night, and the following day without pain, until two o'clock, P. M., when slight pains set in. These became more severe at seven o'clock in the evening, when I was sent for. I found the os uteri dilated to the size of a half-crown piece, and soft. Labour progressed naturally until ten o'clock, P. M., at which time the os was fully dilated, and the head was engaged at the brim of the pelvis, in the second position, about one-third of it having passed through. Free vomiting accompanied this stage of the labour. When matters were in this state, the pains began to diminish in strength; and although they did not entirely cease, they became weak and inefficient. Two hours passed over in this way without any ad-

vance of the head. I had satisfied myself that the pelvis was sufficiently large to allow the head to pass, and at twelve o'clock I gave her a scruple of ergot, and repeated the dose in ten minutes. This quickly restored the energy of the uterus, and the head began to move downwards, until it came to press upon the perinæum, which point it reached at two o'clock, A. M. A very large tumour was formed on the scalp, which partially protruded through the external parts at each pain; the perinæum was rigid and unyielding, and after a few efforts at expulsion, the pains again subsided and became short and feeble. From this time no advance was made. At each pain the perinæum became distended for a moment, and then the pressure subsided. The stomach again became irritable, and rejected the drinks taken by the patient. She became very restless; the pulse rose in frequency, but diminished in size and strength; the abdomen became painful, and she complained of a burning sensation within. At eight o'clock, A. M. the pains had nearly ceased; the pulse was 120, and thready; the vomiting was distressing, accompanied by hiccup; the pain in the abdomen increased, and delirium commenced. Under these circumstances I determined on delivering her by the forceps. The instrument was easily applied, and with a few efforts directed in the axis of the orifice of the vagina, the head was brought through. No uterine action was excited by the operation. The perinæum, although rather rigid, was well guarded by an intelligent nurse, and not a single fibre was lacerated. The uterus still remained inactive and I was obliged to extract the shoulders of the infant; the rest easily followed. The child was dead; the limbs were spasmodically contracted; the fingers bent; and the surface was in many places livid. The placenta was found in the vagina, from which it was easily removed. The uterus contracted well, and no hæmorrhage followed. The patient recovered well.

Case XI.—Age 20; first pregnancy. I was called to this lady at ten o'clock, A. M., her attendant, Mr. Rumley, not being in town. I learned that she had been in strong labour for two

hours. The os uteri was found nearly dilated, and the head descending in the first position. The pains were very strong and frequent. I waited until twelve o'clock, when Mr. Rumley arrived, and I gave the patient into his charge and retired. At ten o'clock, P. M. I was sent for by Mr. Rumley, and I found the patient undelivered. I learned that the pains had continued very strong during the day, that the head had come down to a certain point in the pelvis soon after I had left, and was there arrested. On examining closely it was found that at each pain the head came down to the spinous processes of the ischia, beyond which it could not pass, owing to a convergence of these processes. Her pulse was 110, her skin very hot, and she had much thirst. After waiting an hour, and seeing that there was no advance of the head, we considered that the deformity was not sufficient to forbid a cautious trial of the forceps, and accordingly the instrument was applied, the blades lying in the oblique diameter of the pelvis, to avoid the projecting spines of the ischia. Cautious attempts at extraction were now made; by degrees the difficulty was overcome, and a living girl was delivered. The patient recovered without any unpleasant symptom.

Case XII.—Age 37; first pregnancy. This patient was under the care of Dr. M'Cormack, who has furnished me with the following notes of her case: "Her labour pains came on at first very slightly, on Friday, April 2nd, about twelve o'clock. She was, however, able to be up and about during the day. The pains did not increase until Saturday morning, on which day I saw her. On examination I found the os uteri dilated to about the size of a shilling, the head presenting in the first position, and the pains frequent, though not severe. On Sunday when I again saw her I found the os uteri fully dilated, and retracted. The membranes had broken; the pains were very frequent and violent, but the head appeared to be making no progress. On Sunday evening the pains had almost ceased. The os externum was hot and rigid; the bowels had not been

freed. I ordered an aperient draught, and after its operation an opiate; hoping that, after its effects, uterine action might set in. However the only effect it produced was relaxation of the os externum. On Monday morning, finding that no uterine action had recurred, I administered ergot of rye, first in half-drachm doses in infusion, repeated twice; and later in the day by giving three doses in powder, of twenty grains each. No uterine action was produced by either dose. I then thought it advisable to send for Dr. Beatty."

I found this patient in a very exhausted state, her pulse 120; the belly tender to the touch; the head fixed in the pelvis, but not touching the perinæum; the vagina and os externum rather dry and rigid; and altogether forming a case by no means favourable for success with the forceps. However, I determined on giving a fair trial of the instrument, and having introduced the blades I proceeded to extract, first moving the handles laterally, in order to loosen the head in its position. In about half an hour the delivery was accomplished, and, although the perinæum proved to be very unyielding, no injury of any kind was inflicted. The child was dead. The mother recovered perfectly.

Case XIII.—Age 25; first pregnancy. This lady was low in stature, corpulent, and of firm, rigid fibre. She had enjoyed uninterrupted health during her pregnancy. Labour began at five o'clock, A. M. by rupture of the membranes. Pains set in about an hour afterwards, and continued regular through the day. The head presented in the fourth position; the os uteri dilated slowly, and at seven o'clock, P. M. it had disappeared, fourteen hours having been occupied in this stage of the labour. The head descended gradually until eight o'clock, P. M., at which time the prominent point of it had reached the perinæum, but although the pains were very severe, no change in its position was effected from that time. The anterior fontenelle remained towards the right foramen ovale, and did not at any time turn towards the back of the pelvis, as it so frequently does

when it descends in the fourth position. An enema was now administered, which acted freely on the bowels, but made no impression on the situation of the head. The pains continuing violent, the pulse got fast, and soon rose to 130, the face became greatly flushed, and the skin hot. From midnight until two o'clock, A. M. this state continued, when I took blood from her arm to the amount of eighteen ounces. The blood became speedily cupped and buffed. No change was produced by the bleeding. At four o'clock, A. M. finding that no advance of the head had occurred since eight o'clock of the previous evening, notwithstanding severe labour pains, and finding the pulse had now risen to 140, with great thirst and exhaustion, I determined on delivering the patient. I obtained the assistance of Dr. Montgomery, who agreed with me that it would be dangerous to allow the patient to remain longer undelivered, and that the forceps might be employed. I accordingly introduced the instrument, and with a good deal of difficulty the position of the head was rectified, by turning the anterior fontenelle towards the hollow of the sacrum. When this was accomplished extracting force was applied, and in about half an hour from the commencement of the operation the head was brought down to distend the perinæum. Having got it so far, and finding the uterus acting vigorously, I withdrew the instrument, and the head was soon expelled. The countenance of the infant was very livid, the eyes were much suffused, and it lay as it were comatose. The umbilical cord was cut across, and allowed to bleed, and this, joined to the usual means of stimulation, soon succeeded in reviving the child; no laceration of any kind took place, although the head of the child measured $15\frac{1}{8}$th inches in circumference.

Case XIV.—Age 30; first pregnancy. I was called to see this case by Surgeon Neville, who had the charge of the patient from the commencement of her labour, it having existed then thirty-six hours. I learned from him that the pains were at first short, but very distressing; that the membranes had ruptured

spontaneously about twenty-four hours after labour had commenced, giving exit to a very small quantity of liquor amnii, at which time the os uteri was dilated to the size of a crown piece. Shortly after this occurred, the pains became weaker, and then ceased, the patient began to complain of exhaustion, and restlessness; the pulse, which had been 86 previously, now sank to 58 in the minute, and a cold perspiration covered her surface. From this state she was roused by the administration of small doses of wine and water, and the pains returned with increased vigour. The os uteri now dilated freely, and the head passed through it about twenty-eight hours from the beginning of labour. The progress of the head continued for two hours more, at which time it almost reached the perinæum. The pains now again diminished in strength and frequency, recurring only at long intervals, and being short and ineffectual. In this condition the patient remained for four hours, at the end of which, finding that no progress was making in the advance of the head, I was sent for. I saw the patient at just thirty-six hours from the beginning of her labour. The pains had now ceased, she was tossing about in the bed, complaining of excessive weakness; the pulse was 100, and very feeble; the stomach rejected her drinks, and the discharge from the vagina was of a very fœtid nature. Under these circumstances, I was of opinion that speedy delivery was called for, and having drawn off a large quantity of water from the bladder, I proceeded to the operation with the forceps. After the blades were applied, a good deal of difficulty was experienced in first dislodging the head from the position in which it was placed; but after that was accomplished, the rest of the delivery was performed with considerable ease, and a living boy was extracted. The mother recovered without a single bad symptom.

Case XV.—Age 18; first pregnancy. This lady, of a weak, delicate constitution, came over from England for her confinement. She had suffered a good deal from headach during her pregnancy; but when I first saw her a few days before labour,

she was pale, free from pain in her head, and with a languid pulse. Labour set in at two o'clcck, P. M., and continued with severity until ten o'clock, P. M., at which time the os uteri was fully dilated. The head was passed with some difficulty into the cavity of the pelvis, and the pains became most urgent and severe. The patient soon began to complain of great pain in her head, and her pulse became more frequent; and not long after she thought she saw strangers standing at her bed-side. This was quickly succeeded by loss of vision; whereupon I at once opened a vein in her arm, and abstracted eighteen ounces of blood. The operation was hardly concluded when she was seized with convulsions. This took place about midnight. The bandage was removed from the arm, and twenty ounces of blood were allowed to flow. Her hair was cut off, and cold applied to her head. I dispatched a messenger to my house for forceps, and Dr. Peebles was requested to give his assistance. The patient lay in a comatose state after the last bleeding, in which she continued until the arrival of Dr. Peebles. We agreed that delivery with the forceps should be performed, and the operation was accomplished in the usual manner. The child was dead. After the operation the patient continued in a very weak state for several hours; no convulsion recurred; and she finally recovered without any bad symptom.

In these fifteen cases, the operation was performed with complete success, as far as the mother was concerned; not a fibre of the perinæum was torn in any of them, although eleven were first deliveries. In one case only local inflammation followed the operation, and in that case (the first), I have already said that I delayed to interfere longer than I ought, and the result to the mother and child is evidence that procrastination was fatal to the latter, and caused the local, but temporary, inconvenience to the former. Of the fifteen children, seven were born alive, and eight dead; but of these, six were born under circumstances that would have caused a similar result independently of the operation. Thus, in three of the cases, VIII. X.

XII. ergot of rye had been administered some hours previous to delivery. Now, it is well known, that when a certain time elapses between the administration of this drug, and delivery, the child is most commonly still-born. It is difficult to state exactly what length of time is required to cause the death of the infant in such cases; but I have reason to believe, from some observations I have made, that in two hours after a full dose is given, the fœtal heart will cease to pulsate. In the cases above alluded to, a greater length of time than that, intervened between the taking of the medicine and the delivery of the patient. The death of these children therefore cannot be ascribed to the operation. Two cases (VII. and XV.) were attended with convulsions, an accident that notoriously destroys the life of the fœtus before birth. And the case (IV.), in which the footling presentation occurred, must also be struck off the list, inasmuch as the funis had ceased to pulsate before the operation was commenced. We thus have the cases in which it is fair to estimate the value of the operation with regard to the infant, reduced to nine. In seven of these, living children were born; and of the two that were dead, I have reason to think, that the result was owing in one of them (I.) to the delay of a few hours after urgent symptoms had become manifest.

It is not consistent with the nature of this communication to enter upon any minute description of the operation with the forceps; but I cannot conclude without making a few observations upon the form of instrument most suitable, in my mind, to those cases in which the head is arrested in the pelvis, before it has come down to touch the perinæum. In such a position, a longer instrument than that in common use will be found of great advantage; and a blade constructed as in the accompanying sketch, will be more easily introduced, and when both blades are passed along the head, the handles will be more readily locked together, than when the usual form is given to the instrument. The entire length including the handle is $12\frac{1}{2}$ inches. Of the blade to the lock, 8 inches; of the fenestrum, $5\frac{1}{4}$ inches; the greatest

breadth of blade, $1\frac{5}{8}$ inches; the widest part of the fenestrum, 1 inch. The distance between the blades when joined, 3 inches at widest part; distance between the extreme points, $1\frac{1}{8}$ inch. The sides of the blades enclosing the fenestra are nearly round, slightly flattened upon the inner and outer surfaces, but having no sharp edge, either on the outer border or the margin of the fenestra. The advantages that such an instrument possesses over others are, first, from its narrowness, the blade is more easily introduced. Secondly, when both blades are applied, the handles can be locked with greater facility, and from the length of the blades the lock will not be within the vagina. Thirdly, from the rounded form, there is no danger of hurting the mother in the introduction, or of cutting the scalp of the child's head with the inner edge of the fenestra in its extraction. This is a point upon which too much stress cannot be laid in ordering or choosing an instrument, for most of those that are found at cutlers, are finished with such sharp edges, that both mother and child are in danger of being injured by their use. With such an instrument, as I have described, and with an accurate knowledge of the anatomy of the pelvis, and of the mechanism of parturition, it will be difficult (if reasonable caution be used) to inflict any violence upon either of the objects of our care. But a clear view of the relation that the brim, cavity, and outlet of the pelvis bear to each other, and the line described by the axis of the entire cavity, must be entertained by the operator, to insure a successful termination.

The accompanying diagram should be painted on the mind's eye when this operation is undertaken. On referring to it, the parts just alluded to will be found delineated, and it will be seen that the axis of the cavity is a curved line, extending from the centre of the plane of the brim, to the centre of the plane of the outlet. Force applied for the extraction of a head must be used in the direction of the axis, at the particular part in which the head may be placed, and the direction of the force must be altered as the head descends, so as to correspond with the ever-

varying direction of the axis of the cavity. If this rule is not followed, injury and failure are very likely to occur. The position of the handles of the instrument, when it is properly applied on the head, will point out the direction in which the extracting force is to be employed. Thus, when the head is high up in the pelvis, it will be found that after the blades have been passed up, and the lock joined, the handle will be directed backwards, and will press against the fourchette. Under such circumstances, any attempt to pull in the direction of the outlet would be fruitless and mischievous; but if we follow the natural curve of the cavity, and draw first backwards, then downwards, and lastly forwards, according as the head is moved through the cavity, we will find our efforts crowned with success; and unless the operator is devoid of common sense and discretion, and uses brutal violence, he will scarcely do any injury to his patient. If the head is lower in the pelvis than the case we have just supposed, it will be found that the handles of the forceps will look proportionably downwards, or even forwards, as the head is placed nearer to the vulva, and this direction must be followed in beginning the operation. In this case a shorter instrument than the one described, but constructed in the same manner, will be more convenient. As I have already said, it is not my intention to give a detailed description of the operation with the forceps; but I thought it well to offer these few remarks upon what appear to me important points connected with it. In conclusion, I would say, let no one undertake it without good instruments, good patience, and an accurate knowledge of the position of the head, and of the anatomy of the parts through which it is to pass. If he brings these to the task, he will have reason to rejoice at saving lives from imminent peril.

ART. XIII.—*Cases, with Observations on certain malignant Diseases of the Head and Face.* By L. BYRON, M.D., Surgeon of the County of Meath Infirmary; Corresponding Member of the Dublin Obstetrical Society, &c. &c.

ALL those who have attentively regarded the research of bygone and cotemporary inquirers in this attractive, but hitherto delusive and imperfectly explored field of human pathology, namely, malignant disease, must be struck with the comparative unprofitableness of those labours, which, for the most part, amount to little more than vain and contradictory speculations. A more intimate practical analysis of those protean maladies, as they affect separate parts of the frame, apart from that "El Dorado" already alluded to, would most probably, in the present state of our knowledge, lead to far more useful results. With this view the following cases and illustrations have been selected, and, first,

Those which refer to melanosis of the eye will, it is hoped, serve to illustrate a pathological problem of much interest, namely, whether that affection should be regarded in the light of an inorganic, harmless deposit, or as forming a distinct malignant disease.

A brief glance at the writings of a few distinguished pathologists will evince the discrepancy here alluded to.

Dr. Carswell says, "Melanosis I believe to be an inorganic substance, injurious only from its quantity, the number of organs it affects, its situation, and mechanical operation."*

Lobstein and Cruveilhier entertain similar sentiments. The former says he has seen various parts of a membrane painted black—"kerranosis;"† the latter instances two forms of what

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* Fas. No. 3. Art. Melanoma.

† Andral imagines the jaundice of young children to be this particular affection. Laennec, who first describes the complaint, calls it "cerrosis," and says it is deposited in masses on layers, sometimes in a cyst, as exemplified in the hard tuberculated liver of gin drinkers, &c.

Allens Lithog 16 Trinity St

a. Shell of bone thinned and covering imperfectly the malignant growth.

b. The unbroken surface of the disease having minute Ramifications of vessels.

c. The broken surface.

he calls natural melanosis, viz., the pigmentum nigrum of the choroid coat, and the secretion found in the ink-bag of the cuttle fish.*

Some of our own writers are quite at issue with the distinguished pathologists just named in regard to the nonmalignancy of melanosis. Mr. Wardrop considers it to be a mere variety of fungus; and Mr. M'Kenzie says, "it is undoubtedly of a fungous nature."† Dr. Warren says, "Melanosis of the eye is a rare affection. There are two kinds: one malignant, the other not. I have never seen the former, and presume it has the character of a black fungoidis."‡

Case 1.—L. Keenehan, æt. 4 years, was admitted into the county of Meath Infirmary on the 2nd January, 1826, when the following report of his state was taken: "General aspect delicate, with fair hair and complexion; the right eyeball is very considerably enlarged, projecting much from the orbital cavity, so as to form a large tumour. Its size is that of a small apple; its figure circular; and its surface florid; presenting an appearance of minute arterial vascularity. The superior half of it is covered by the upper eyelid, of a dark erysipelatous colour, extended over but not adherent to it; the inferior half is exposed, and adherent to the lower eyelid, which it appears to have pressed downwards. The tumour is generally soft to the touch, but its feel has a degree of firmness or elasticity. On its front is seen the cornea, opaque, brown, and disorganized; immediately over the centre of which is a superficial ulceration, having a greenish aspect, a quarter of an inch in length, and extending transversely. A muco-purulent discharge is secreted from the diseased surface in small quantity. He suffers no pain, except when the tumour is pressed upon. The natural functions are but little disturbed." His father stated "that the disease

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* Anatom. Pathologique.

† A Treatise on Tumours. By R. Warren, M.D., p. 519.

‡ Treatise on Diseases of the Eye, 3rd Edition, p. 622.

had commenced two months before, as ordinary ophthalmia, with much swelling of the upper eyelid. A fortnight after the ball began to swell; a symptom which was accompanied with considerable pain in the part, interrupting rest. There had been much increase in the tumour for the previous month, and it was daily becoming larger. Vision was destroyed at an early period. Never had complained of headach, and could assign no cause for the disorder." His bowels and diet were regulated, and emollient applications made to the tumour. A fortnight after admission his general health seemed improved, and the turgid, inflamed state of the upper eyelid had been lessened, but the tumour had increased in size. At this time it presented a uniform, florid, fungous appearance, with a depression in its centre, half an inch deep, marking the place from which the disorganized cornea came away. It had also begun to discharge blood in small quantity; but, in general, the discharge differed little from the natural conjunctival secretion, and formed a yellow scab tenaciously adherent to the surface.

The malignant nature of the disease being evident, and nothing in the state of the other eye, which appeared perfectly sound, or of the general health, which, though delicate, had been much improved by good diet and care, contra-indicating an operation, extirpation of the disease was performed on the 20th January.

Operation.—The patient being laid upon a table, with his head gently raised, an incision was made from the external commissure of the eyelid to the outer edge of the orbit; the conjunctiva was then divided from this point to the inner side of the tumour, pretty nearly in a line with, and close to the upper margin of the lower eyelid. A similar incision was made superiorly along the border of the upper eyelid, which joined the other at the inner canthus; so that the three wounds formed one continuous surface. The lower eyelid was now detached from the tumour, as far as the bony edge of the orbit; the levator palpebræ and upper eyelid were, in a similar manner, de-

tached above; after which the remaining connexions of the tumour to the orbital edges were separated. At this period, the forefinger of the left hand, being introduced between the eyelids and tumour, distinctly felt the attachment of the two oblique muscles, which were then divided upon the finger. A little further dissection, in the same cautious manner, freed the diseased mass from its other lateral adhesions. Nothing now remained to be done but to divide the four recti muscles and the optic nerve, which was easily effected with the common straight scalpel. A warm sponge was then passed into the orbit, and, after a short period of rest, the socket was cleared of diseased parts, as well as could be done. A small portion of soft substance, however, remained at the bottom of the orbit; this, although very inconsiderable in size, could not be completely removed, appearing to pass into the cranial cavity; and as the parts showed a disposition to bleed, it was deemed prudent to cease further attempts. The socket was, therefore, lightly filled with charpie, over which were placed a compress and roller, the latter carried also over the sound eye. The patient bore the operation well, had a little wine and water during its continuance, and lost, perhaps, two ounces of blood. There was no bleeding per saltem, nor any thing very like arterial hæmorrhage, unless a smart oozing from the socket immediately previous to the application of the charpie.

Examination of the Tumour.—The diseased structure presented a good specimen of that morbid alteration of parts which, for want of better names, we designate fungus hæmatodes, medullary sarcoma, or soft cancer. It consisted of three lobules: the first and largest, nearly the size of a pigeon's egg, occupied the seat of the lachrymal gland; the second, more than half as large, lay towards the inner side of the orbit; and the third and least considerable portion extended backwards, enveloping in its substance the optic nerve and recti muscles, no distinct traces of which were visible. A cavity in the centre of the diseased mass, in some degree corresponding to the position of the cells of the

vitreous humour, was filled by a soft black substance about the consistence of thick cream, half putrid and very fœtid.

The sclerotic coat, surrounded by, and partaking very considerably of the disease, was almost the only vestige which remained of the healthy eye. The tumour was firm to the touch, but not hard, and on the surface was a minute vascular network. On cutting into it, a uniform whitish, demi-cartilaginous appearance presented itself. The conjunctiva adhered loosely to the newly-formed substance,and was free from the general morbid tendency, although thickened.

An anodyne was administered after the operation, and he passed a good night, interrupted only by some muttering in his sleep: this slight degree of delirium ceased after the second day. His pulse, also, 160 the day after the operation, soon fell to 120, at which degree of frequency it continued for some days; but his fever was, on the whole, moderate, being checked by suitable diet, aperients, &c. As early as the second day the eyelids began to granulate; and about the tenth day granulations were observed to shoot from the floor of the orbit. The charpie was withdrawn the day after the operation, and oiled lint substituted for it.

On the eighteenth day the entire of the orbit was granulating, and the cavity had diminished one-half. On the thirtieth day his pulse was but 100, and his general health good. The eyelids had resumed their natural size and appearance, two-thirds of the cavity had been filled up. So far every thing promised well; but on the fortieth day an unfavourable change took place. He began to look less healthy, the granulations assumed a yellowish white aspect, and the left eye, till then apparently sound, became amaurotic; its pupil widely dilated and motionless, and he could only discern the light of a candle.

On the fifty-second day the state of the left eye was improved; the pupil had diminished to half its former size, and he was able to discern certain objects, such as a pen, a towel, &c. The cavity measured but an inch in depth and width, and it was diffi-

cult to see into it, from the disposition to contraction which existed at the margins of the eyelids. On the fifty-sixth day he complained for the first time of pain at the back of his head, and in the right orbit. On the sixtieth day the pain was confined to the right side of his head; some of the lymphatic glands on that side of the face, and about the parotid glands were found to be considerably enlarged.

He had three grains of blue pill daily and the acid decoction of bark.

On the sixty-fourth day the improvement in the state of the left eye was found to have been but transitory, and the pupil had become as large as before; the growth of the granulations appeared to have been arrested; and his general health had evidently become worse; the swelling of the right lower eyelid had increased, and he was much distressed by headach; his pulse was 100, and weak, and his appetite bad.

On the seventy-seventh day, the tumour of the right lower eyelid had acquired the size of half a common plumb, and its surface was livid; the pupil of the left eye was so excessively dilated as scarcely to allow any of the iris to appear; he was much distressed by excruciating pain at the back of his head, so severe as to oblige him to cry out loudly and frequently; his pulse was 120, very small and weak, his countenance sunk, and death evidently near at hand. In this state he was taken home, where he survived but a few days. I was not sufficiently fortunate to be permitted to examine the body.

Case II.—Richard Donnelly, a labourer, æt. 21 years, was admitted into the Co. Meath Infirmary, on the 24th March, 1827. Hair and complexion dark. His left eye was affected with cataract, and with what appeared to be amaurosis; the conjunctiva was extensively chemosed, and the eyeball somewhat enlarged; the inflammation, pain, and lachrymation inconsiderable. He complained of headach, and his pulse was 60, and full; his general health was good, and his constitution robust. He had had no vision in the eye for a year; the other symptoms

were only of a week's standing, and had been produced by striking the eye against a stick. Three weeks afterwards it was deemed expedient to perform the operation for staphiloma; as the functions of the eye were irretrievably gone, it was hoped the eye would, after the discharge of the humours, and in consequence of the enlarged vessels being unloaded, probably sink into the socket, and give no further trouble. The operation was accordingly performed on the 27th March, somewhat more than three weeks from the time of his admission; the sclerotic and choroid coats being divided three lines behind the ciliary ligament, and a large segment made of the ball, which included within it the lens in an opaque state, with its capsule and the iris. The vessels in general bled freely, and some coagulated blood found its way into the anterior cells of the vitreous humour. He had an anodyne at bed-time, but notwithstanding, suffered severe pain in the eye, and slept none. An emollient poultice and water-dressing were applied, and the pain did not recur. The wound discharged pus and bloody matter in moderate quantity, and for some days the swelling appeared to be gradually diminishing; however, on the 29th April, about a month after the operation, the report was that the wound had filled up, and the eye was as large as before the operation, having a uniform fungous aspect. At this time he suffered little uneasiness, and wished to go home. He was therefore discharged.

On the 2nd February, nine months afterwards, he again presented himself. The tumour had very considerably increased in size within the preceding three months, and was then as large as a middle sized orange. Its circumference at the base, including the lids, measured nine inches; in the centre seven inches and half, and at the top six inches. The upper eyelid was extended for two inches over it, and the under eyelid for one inch; and they both adhered to its surface through the medium of the conjunctiva, which was moveable upon it. The anterior surface of the tumour had lost its smooth, uniform condition, and now presented an irregular aspect, from the existence of three

protuberances upon it, each about the size of a walnut. The most prominent, and, at the same time, the most internal of these was of a dark purple colour, and bled when touched; the others had a somewhat less vivid tinge, intermixed with a light pink shade; and the base of the tumour partook of the same colour. To the touch it was firm, elastic, especially in the situation of the projections, and in some places hard. The patient stated that it had sometimes discharged so much as a pint of blood at once. His general health was somewhat improved.

A fortnight after this report, on the 16th February, he was re-admitted into the infirmary. At that time the disease was evidently advancing with rapidity. The central and external protuberances had increased, and presented, in addition to their former colours, a greenish aspect, their surfaces, also, were partially ulcerated; three ulcers appeared upon them, and one upon the lid itself, near the eyebrow. All the ulcers discharged a small quantity of ichor, and the tendency to hæmorrhage appeared in a great measure to have ceased. He now, for the first time, complained occasionally of severe pain in the tumour, shooting to the back of his head, and there was a slight degree of chronic inflammation of the upper eyelid. His pulse was 80, and moderate; and his general health, though somewhat impaired, had not suffered materially.

The operation of extirpation of the globe was performed on the 28th February, one year from the time of his first presenting himself at the infirmary; and two years from the commencement of the disease in the eyeball.

An incision was first made from the external commissure of the eyelid, to the external angle of the orbit; this, from the elongated state of the lids, was fully an inch and half in length. An incision was next carried through the conjunctiva covering the tumour, from the inner angle of the eye, along the hairy margin of the under eyelid, to the outer angle, where it joined the first incision. A similar division of the conjunctiva was made above along the border of the upper eyelid, which also

joined the first incision at the outer angle of the orbit. The conjunctiva and lids were now stripped from the tumour above and below, until its surface was completely exposed all round as far as the margins of the orbit. The tendon of the superior oblique muscle was next divided on the left forefinger, and subsequently that of the inferior oblique muscle, in the same manner. The division of these tendons allowed the fingers to be passed freely round the orbit in all directions. The remaining attachments of the tumour, which were extensive, were afterwards divided, and the diseased mass, which was of great size, its posterior half filling up the orbital cavity, was removed. The os planum was perforated for a space as large as the nail of the forefinger, and the edges of this perforation were rough. There was a smart hæmorrhage from the ophthalmic and infra-orbital arteries; this was stopped by compression with lint and the fingers, during the time that some portions of thickened fat and cellular substance were being removed. The orbit was then filled with lint, and the bleeding quickly ceased. A portion of the upper eyelid, including the ulcer, was excised. The patient lost about eight ounces of blood. He sustained the operation courageously.

Examination of the Tumour.—The report taken at the time stated it to be a diseased structure, "sui generis," resembling neither cancer nor fungus hæmatodes. I have now no hesitation in pronouncing it to have been a good example of melanosis.

The report goes on to state, that there was no appearance whatever of the lachrymal gland, and scarcely a vestige of the healthy eye; in place of the eyeball was a fleshy firm mass, on the surface of which ran the straight and oblique muscles, increased in size, particularly the obliquus inferior, abductor and adductor. Beneath these was a strong tendinous fascia, or fibrous membrane, apparently the sclerotic coat, extended and altered in its nature; on stripping off which, the surface of the tumour was exposed. The entire superficies was rendered irregular by numerous projections, or tubercles, of various sizes, from the di-

mensions of a pea to that of a chestnut; the larger being of a dark brown or blackish colour; the smaller of a lighter brown hue. Between these tubercles was interposed a white demi-cartilaginous substance. The larger projections, on being divided, exuded a matter similar to the pigmentum nigrum of the choroid coat, and were composed of a more dense structure of the same nature. The centre of the tumour, for an extent equal to, at least, one-third of the entire mass, was occupied by a similar substance. The smaller tubercles, on being cut into, presented an aspect of the same sort, but lighter in colour. Some of them were firm to the touch, others soft. The larger ones were generally softest. The optic nerve was sound, but narrowed near its junction with the eye.

As to the termination of the case, he progressed favourably to a satisfactory cure. He was treated like other patients who have undergone operations of magnitude. His fever was moderate, his pulse never rising above 80. For some days he complained of a slight headach, which did not, however, interrupt sleep, and he was somewhat annoyed by a swelling of the eyelids and left side of his face. On the tenth day, these symptoms had disappeared; the entire cavity looked healthy and was granulating rapidly; the denuded bone was covered; and the eyelids had regained their natural size, the upper lid appearing at this time to be scarcely of sufficient size to allow of its covering the exposed socket. The edges of the wound in the upper eyelid had approximated.

On the twentieth day, half the cavity of the orbit had been filled up. On the sixtieth day there was no longer a cavity in the place of the eyeball, and the lids became adherent to the granulations proceeding from the socket, and thus covered the socket so as to diminish deformity.

On the eighty-eighth day the wound was completely healed, and the appearance of the parts good. There was a slight natural secretion from some small portions of the conjunctiva, which had remained adherent to the tarsal cartilages. He was

discharged cured, and continued well and perfectly free from any return of his complaint, as I had an opportunity of ascertaining for nearly four years afterwards, when he was carried off by a fever.

Case III.—Rose M'Cabe, æt. 55 years, admitted into hospital, August 10th, 1837. Her statement of herself was, that she never was ill during her whole life up to about two years ago, at which period she first discovered a defect in the sight of her left eye. Her hair was light coloured; her general appearance that of health, although her countenance was remarkably white and exsanguineous, her entire aspect thin and worn, which, however, she said was natural to her.

A fleshy, wartlike tumour, red, and but slightly elevated, soon presented itself upon the conjunctiva, near the cornea, on the temporal side. This gradually extended itself, involving the globe and destroying the sight, which last was totally lost, about eight months after the disease commenced. The eye, at the time of her admission, was not much enlarged, nor was the pain considerable up to about four months before admission, from which date, however, the pain, which at first was of a tingling, burning kind, was exchanged for sharp and lancinating shooting from the eye, through the temples, towards the occiput. The growth of the tumour she describes to have been rapid within the last named period. The upper eyelid was tumid, and felt soft and puffy to the touch, it projected considerably beyond the range of the superciliary ridge, carrying with it the tarsal border, by which means about one-third of the tumid globe was exposed. The conjunctiva covering the eye was highly chemosed, as was also the conjunctiva palpebræ: no adhesion had taken place between the lids and the eye itself, nor did the secretions, which they poured out in abundance, appear to have undergone any change from the healthy state. The cornea was opaque, and was involved, to nearly one-half its diameter, in indurated, flesh-like tubercles, which seemed to have taken possession of the entire of the anterior circumference of the globe, as

far backwards as the finger could discover. A small portion of the cornea, towards the internal canthus, was tolerably clear, but the pupil could not be seen.

The eye was extirpated on the 20th of August, ten days after her admission. No regulation of her health appeared to be necessary, beyond a cathartic or two, and suitable diet.

The several steps of the operation were conducted on a plan similar, in all respects, to what has been already detailed: in this case the smaller size of the globe opposed but little obstacle to its removal. On cutting into the tumour already described in the upper eyelid, about half an ounce of perfectly black fluid flowed out, and having removed the ball of the eye, the entire of the back part of the orbit, especially towards its superior aspect, was found occupied by the same kind of matter. The optic nerve was free of all cellular connexions, and appeared to float in this melanotic fluid. The nerve was not thickened, but near its point of union with the globe, it was lessened in size and corroded in two places, so as to break before the scalpel in the act of dividing it.

The scirrhous indurations of the globe did not extend so far backwards as the entrance of the optic nerve. The entire of the cells of the vitreous humour, or more properly speaking, the entire of the selerotic coat was filled with black fluid, in all respects like that already described. The lachrymal gland was partially indurated.

The case progressed without an untoward symptom: the pain left her head a few hours after the operation, and she was discharged well, on the 15th of October, little more than one month from the date of the operation. A small ulcer, not larger than a four penny piece, remained open at the time. On the 20th of December following, however, she presented herself at the Infirmary, with cancerous ulcerations and scirrhous thickenings of the skin of the temple, both eyelids, and a portion of the cheek in the neighbourhood of the external canthus: the same diseased appearance took possession of the neighbour-

ing parts of the socket to nearly its bottom, but there was no recurrence of the melanosis. The poor woman, on being told that nothing could then be done for her, returned to her home, and as I was informed, died about three months afterwards.

Case IV.—Michael Monaghan, labourer, æt. 65 years, was admitted into hospital, February 6th, 1838. His hair and complexion were remarkably dark coloured, and his body and limbs were covered with an unusual quantity of long black hair: he was thin and worn, so much so, it was with difficulty he walked to the hospital, a distance of one mile. The following report was noted at the time. About eighteen months ago he first lost the sight of his right eye, from what appeared to have been cataract. Six months afterwards he first perceived what he calls a pearl upon the cornea, near its circumference on the temporal side; this remained stationary until about four months previous to his admission, from which time it grew rapidly, accompanied by pain, which he describes as if pins and needles were stuck into the eye about the external canthus, and this increased in intensity as the disease advanced; the pain he describes as being much worse at night than by day, never extending itself beyond the eye, temple, and forehead. At present the eyeball protrudes in an irregular, tuberculated form, outside the eyelids, which appear free from adhesions to the globe, as also from disease. The upper lid covers about a third of the tumour, is red and slightly œdematous. The under lid is not visible without raising the diseased mass which hangs upon and over it. The tumour is of a dark reddish colour, discharging fœtid darkish ichor which excoriates the cheek. The cornea can be seen, imbedded, as it were, in the disease; it is tolerably clear, except at its outer aspect, where the disease is said to have originated, and it is pushed towards the internal canthus, so as to be in part concealed by the caruncula lachrymalis. The tumour is about the size of a small orange, not very sensible, unless when pressed forcibly, but it is firm and unyielding to the touch.

The operation of extirpation was performed at his anxious desire on the 12th of February, at which time the appearance of

the disease was noted. On the anterior hemisphere, especially towards the external canthus, not a vestige of normal structure could be recognized, the hardened, fleshlike tubercles which presented themselves externally, formed the walls or boundary of a mass of softened black matter, about the consistence of thick flummery. The cornea alone for about one-half its extent on the inner side remains intact; the same power of resisting the disease was remarkable in the lower jaw bone, which lay imbedded in it, and was stripped of periosteum as far forward as the angles of that bone; the bone itself being perfectly intact. Not a vestige of the internal structure or coats of the humours could be discovered, unless at the back part, near the entrance of the optic nerve, through the sclerotica, where that coat, for a small space, appeared healthy, as did the nerve also, except in two points near the globe, where it was thinned, so as to break before the finger, which it did during the operation when feeling for it previous to its division by the knife. A few hardened pieces of cellular substance were removed from the orbit, but the chief part of that cavity was occupied by melanotic matter, in all respects resembling that which I have described.

The pain left his head a few hours after the operation, and he progressed to a perfect recovery, without an untoward symptom. The orbit had healed by the end of five weeks, yet he was observed not to be regaining either his flesh or strength. Two months after this period, and somewhat more than three from the date of his admission at the infirmary, he complained of pains in his back and legs, he was harassed with a trying cough; his abdomen, especially towards the hypochondria and epigastrium, was tender to the touch, and thus, in despite of every means used for his restoration, he gradually sunk and expired, apparently from exhaustion and without pain.

The body was examined ten hours after death, when the following appearances were noted:

Extreme emaciation, without a tendency to the effusion of fluid into any part of his body or limbs.

Five circumscribed black tumours were counted upon his chest and abdomen; those varied in size, from that of a small pea to a filbert nut. When cut into, some condensed cellular substance in the shape of a cyst was found to surround them, but no connexion could be discovered between these cysts and the contained pastelike matter which resembled the contents of a decaying lycoperdon (puff ball) rendered cohesive by a small portion of liquid. Its colour was deep brown, it was not fibrous, nor had it any appearance of being organized.

Brain.—The brain was remarkably firm and pale, no melanotic deposit was discovered in any part of its substance or membranes. The ventricles contained no fluid. The optic nerve, near the foramen opticum, was small, firm, and contracted; some slight adhesions, apparently the result of inflammation, were evident at this point.

The orbit, which was the seat of operation, was partly filled up with what looked like healthy granulations. All the bones forming the walls of the orbit were perfectly healthy.

Chest.—The lungs presented a most extraordinary appearance, their surface being dotted over by a number of melanotic tumours of various sizes; one was as large as a hand ball; all of them were perfectly circular in shape, and lay immediately under the pleura, from which they derived a partial covering or capsule, varying in extent in proportion to the size and prominence of each. No capsule could be discovered on the posterior aspect of these tumours, but the lung in their immediate vicinity was softened, and became more or less black. Several vomicæ were discovered in the upper lobe of the right lung, and tubercular deposits had taken place in the left lung. The number of tumours found in this part of the dissection was nine. The pleura costalis, heart, and great blood-vessels were perfectly healthy.

Abdomen.—The liver was about its natural size, but had four large melanotic tumours upon its convex surface; those lay under the peritoneal coat, and were in all respects similar to those found upon the lungs; one of those near the great fissure was as large as a turkey's egg, and projected above the level of the liver about one-third of its entire bulk. The colour of the liver was light brown, approaching to what is familiarly know by the appellation of the drunkard's liver.

No other organ appeared to be diseased, but on removing the liver a large tumour was discovered to have descended between the crura of the diaphagm, on opening which a large quantity of thin pus was discharged, and it was discovered to have originated from a disease of two of the dorsal vertebræ, the fifth and sixth.

The malignant diseases of the eyeball are considered by most authors* to be three in number, viz., cancer, fungus, and melanosis; the two former existing as distinct affections; the latter frequently associated with either of the others.†

The first is distinguished as attacking the old; making slow progress; seldom attaining a large size; being accompanied by lancinating pains; and eventually extending to the eyelids and lachrymal glands, and presenting at last a true cancerous ulceration. Such a tumour, on extirpation, so far from presenting anything like a fungous or medullary substance, is found to be extremely firm, and of such a fibrous or striated texture, as to merit the name of scirrhus.

Fungus hæmatodes, on the contrary, usually attacks infants and young persons, running quite another course, clearly divisible into three stages. In the first the pupil is dilated and im-

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* M'Kenzie, Op. Cit.

† Roupel, as quoted by Andral, speaks of ulcerated cancer of the mammæ secreting melanotic matter. Dr. Carswell says it is more frequently combined with carcinoma, than with any other disease, but gives no examples of such in the eye.

moveable, having at its bottom a peculiar yellow, metallic appearance, and the form of the ball is unchanged. In the second stage, the sclerotic coat has become discoloured, and irregular on the surface; the eye, more or less fixed, appears enlarged and ready to give way, and pain and inflammation have set in. In the third stage the tumour has forced its way through the sclerotica or cornea, covered for a time by the conjunctiva, it grows with great rapidity, and appears as a dark red fungus, irregular on the surface, soft, readily torn, and bleeding profusely on the slightest irritation. A section of such a growth displays a brownish white substance, nearly destitute of fibres, and resembling brain in consistency and appearance.*

Melanosis of the eye presents few symptoms peculiar to itself as a distinct affection. It is described† as commencing with inflammation of the ball and pain in the head, succeeded by amaurosis, opacity of the lens, and enlargement of the globe; but it is not until the adventitious production, so characteristic of the disease, has forced its way through the tunics of the ball, that the nature of the malady can be determined.‡ At that period, however, dark, livid tubercles show themselves on its surface at various points, soon degenerating into a black, fungous mass, which quickly ulcerates, sloughs and bleeds, distending the lids, and forcing its way between them. The discharge usually consists of a thin, dark-coloured ichor, or of a dark coloured thick fluid. Portions of the diseased structure are occasionally separated, as if nature made an effort to rid herself of it, the process being accompanied by great pain in the head, and constitutional irritation. Should the disease remain

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* The word fungus hæmatode in France denotes the nævus or aneurism by anastomosis of the English writers. Dr. Duparcque alone appears to have distinguished this from other malignant diseases of the uterus.

† M'Kenzie.

‡ Mr. R. Smith says (Medical Press, vol. v. p. 148), those tumours incline most towards the temporal fossæ.

uncontrolled, it generally extends to the brain, and the patient dies comatose.*

On examination after removal, all traces of normal structure are said to be lost in the morbid mass, the greater part of the cut surfaces present a deep sooty colour, more or less intermixed with black or brown. It is obvious, that this account of the presence of fibrous or brain-like matter, mixed up with melanosis in its solid or fluid form, applies to a combination of that disorder with fungus or carcinoma.

The child Kinahan presents a good example of medullary fungus in its third stage, or when the disease, after having existed longer than the patient or his friends propably were aware of, had burst through the coats of the eye, and acquired free liberty for its devolopment and unrestrained growth. The ill success which has been the general result of similar operations to this, where fungus existed free of all combinations, was not different here. The coexistence of melanosis, however, does not appear to have exercised any influence as to its nature or its termination.

Although Mr. Travers gives a case of happy extirpation of the eye, in a child of eight months old, where the disease had not reached beyond its first stage; yet, as effusions of lymph within the eye may give rise to a deep-seated shining opacity in the pupil, which, says Mr. Laurence, "cannot be distinguished from medullary fungus in the same situation," the nature of the disease, in the case alluded to, may fairly be questioned. Very nearly all the cases recorded by Wardrop, Travers, and others, relapsed.†

The case of Donnelly, No. 2, presents an admirable specimen of melanosis of the punctiform, tuberiform, and stratiform kinds, combined in one mass. (See Plate). The ligamentous

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* Dr. Carswell, Op. Cit. Fas. No. 3, Art. Milan.

† See a review of cases recorded in a Clinical Report by Dr. Ballingall, 1828. Johnson's Journal, April 1st, 1828, p. 258.

degeneration of the sclerotic coat was obviously of the staphilomatous kind. The entire history of the case forbids the idea that it was either cancer or fungus. It is also worthy of note, that the melanotic deposit, although it was of considerable duration, yet exercised no other influence over the disease, than might have been expected from its bulk.

Cases III. and IV. are examples of melanosis combined with cancer or scirrhus of the globe of the eye. In the former case the melanosis was probably of long standing, and had arrived at the third stage.

The case of Monaghan, No. IV., exhibits a striking illustration of the strongest tendency to melanosis of the tuberiform kind, and although he survived beyond the period when cancer usually recurs, after an unsuccessful operation, there was not the slightest appearance of any such disorder in the neighbourhood of the original disease, nor any other part of his head or body; nor did the melanosis recur in or near the eye; his brain was perfectly free from any such deposit. The extreme emaciation of this poor man, coupled with the sallow, almost black aspect of his skin, and the extreme debility of his whole frame, gave slender hopes of a favourable termination; and yet, *quoad* the operation and its consequences, the result was successful: his death was not in any measure attributable to it, on the contrary, the consequent exemption from pain and suffering rendered the last few weeks of his existence comparatively comfortable, and probably enabled him to support life longer than he would otherwise have done.

The *corrosion* of the optic nerve in both those cases I shall not attempt to explain; pressure would seem to be the probable cause, unless we suppose the existence of some corrosive property in the matter of melanosis, which no chemical analysis has hitherto discovered; or admit with Laennec its distinct vitality, as Mr. Carmichael supposes the matter of cancer and tubercle to possess a distinct life, analogous to that of the parasitical ani-

mals, found in the livers of hogs and sheep.* The latter gentleman thus expresses himself:—"Laennec is equally decided respecting the independent vitality of tubercles, and although opposed by Cruveilhier, Majendie, Lombard, Carswell, and others, I am persuaded that future pathologists will adopt these opinions. Dr. Baron, in his work on Tubercular Accretions, is obviously another supporter of this doctrine, which I understand is every day gaining proselytes, but particularly amongst the searching and indefatigable pathologists and naturalists of Germany, so that I feel in no small degree strengthened in a doctrine, which I espoused as long ago as 1806, when the first edition of my essay on Cancer made its appearance, and in which I had no predecessor but Dr. Adams, who suggested my theory, though in the details I differed widely from him."

An operation at any period of that dreadful malady may be fairly questioned, bnt the period at which it may be hazarded in cancer, involves a question of much practical importance. The simple fact of melanosis not relapsing in any of the cases I have recorded, is at once a proof of its non-malignancy, and, consequently, the light estimation in which it may be held as regards the issue of an operation.

Mr. Carmichael assures us with great confidence, he can, with almost unerring certainty, point to those cases of cancer which forbid an operation. "There are, he says, indications which point out sufficiently well, when cancer has not a local but a constitutional origin, and, therefore, prohibit in such cases any attempt at extirpation. These signs are a delicate, sickly appearance, but above all, a peculiar pale, anæmic countenance, inclining rather to a blueish or leaden hue, as if the blood had not been duly oxygenized."

Those observations seem to apply to extreme cases, where the experienced eye can see the *probable* taint of the constitution. He cannot mean, as his words imply, that there are some cases

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* Medical Press, Feb. 5, 1840.

of cancer which have a local, and some a constitutional origin, and that he is able, through the aspect of the countenance, to foretell to which of these, each case individually belongs. Without meaning to dispute the force and fidelity of those impressions on Mr. Carmichael's own mind, it must be confessed, he has failed in communicating to others this very important knowledge, for who is there who has not seen the operation of extirpation of cancer successful where the patient was worn by pain and suffering? and, on the other hand, are we not in the habit of seeing cancer relapse when the operation had been undertaken before the constitution appeared to sympathize or suffer in any material degree?

The case of M'Cabe gave confident hope of a favourable termination, the cancerous disease not having extended itself beyond the front part of the globe; her general aspect was fair and "anæmic," but it was not possible for the most experienced eye to discover the least inclination to a "blueish or leaden hue," and although her appearance and that of Kinahan favoured Dr. Carswell's hypothesis as regards the origin of melanosis,* yet the other cases, especially that of Monaghan, are opposed to it, as the latter is, in a remarkable manner, to that of Mr. Carmichael.

It is said by Dr. M. Hall, that "melanosis generally affects persons of more advanced ages than phthisis, and instead of the hectic and emaciation of phthisis, there is a disposition to

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* "The much greater frequency of melanosis in the grey and white, than in the bay, brown, or black horse, is a circumstance which may be noticed here as favourable to the theory, which ascribes the origin of the disease to the accumulation in the blood of the carbon, which is naturally employed to colour different parts of the body, as the hair, rete mucosum, choroid, and other parts. This theory is supported by the results of the chemical analysis of melanosis, as well as by the facts derived from the consideration of the physical and anatomical characters of the disease, both of which also concur in confirming the opinion I have expressed regarding its seat and mode of formation."—*Dr. Carswell, Op. Cit.*

cachexia and anasarca."* This statement is not borne out by the cases which have fallen under my observation.

As regards the operation of extirpation of the eye, I would say, that a simple scalpel is all that is required for its performance; the fingers and thumb of the left hand of the operator, serving in place of a forceps, but, for the division of the optic nerve, where the disease has acquired considerable bulk, I think that part of the operation will be performed best by a knife with a lateral curve. I have never found it necessary to transfix the eye in order to keep it steady under the operation, this however, may be done or not, at the will of the operator, but what I deem of great importance in this, as in all deep wounds in the neighbourhood of important organs, or extensive mucous or serous surfaces, is the speedy removal of charpie or lint, where such have been used to restrain bleeding. A piece of lint torn longitudinally, and laid in the wound, fold upon fold, may be removed at once with facility, from eight to twenty-four hours after the operation, at which time it will have accomplished all it was intended it should do, and it will not, as it otherwise might, act as a foreign body, and excite the consequent inflammation beyond proper bounds. Water dressing, with or without light stuffing of oiled lint, as the case demands, is all that should be afterwards used.

A Case of Fungus Hæmatodes of great Size, extending itself within the Cranial Cavity, without Pain, and unaccompanied by Paralysis or any manifest Disturbance of the Mental Faculties.

H. O. R., æt. four years and three months, the only son of a gentleman of fortune, possessing health and intellect, beyond most children at his time of life, was first observed to be fretful and unwell about Christmas, 1837. He seemed to have taken cold, his spirits became depressed, his breathing, especially at

* Lancet, May 26th, 1838, p. 278.

night, was somewhat laborious, arising apparently from a cough, there being a slight discharge of white mucus from his nares. It was observed at this time, that although he entered into, and enjoyed his usual amusements out of doors, he was not easily pleased, and his legs and feet were frequently cold. About this period I first saw him sleeping, he lay upon his face, snored deeply, and at the same time was easily disturbed. Some trifling derangement in the secretions from his bowels was easily rectified, his diet was regulated, and his feet ordered to be kept warm.

January 20th. The above symptoms have progressed, he is evidently weaker, his flesh is soft and wasted, his skin arid, still, however, he enjoys his toys, especially in the early part of every day. He goes into the open air, but refuses to walk as heretofore. His attendants observe there is something odd, a slight cast and drooping in his right eye and lid; on close inspection, the strabismus was of doubtful existence, but the upper eyelid was obviously turgid and drooping. His pulse from the commencement was slow, it was at this time 65 in a minute, feeble and irregular.

Some apprehensions were now entertained that hydrocephalus was the cause of these symptoms, a small blister was accordingly ordered to his neck, and other medicines given calculated to combat such an occurrence.

25th. The doubtful appearance of his eye is now more decided; the upper lid covers two-thirds of the ball, and is immoveable, the eye is turned upwards and remains fixed in that position, the iris acts but sluggishly under the impression of light. No shade of colour is observed in the pupil. About this period the remissions, already alluded to, became more marked, in the morning from 6 to 10 or 11 o'clock, he was cheerful, and enjoyed his toys, the remainder of the day and night he lay, as already described, upon his face, his mouth wide open, no air appeared to pass through his nose. From the commencement the sense of smell was absent. The sense of

hearing, however, was now so acute, the lowest whisper was heard by him at a distance which surprised his attendants. His complexion varied, at one time it was high-coloured, but more frequently pale.

Up to this period, he did not complain of the slightest pain in his head; when asked the question, he now and then said his head ached. His legs and feet are now heated with difficulty, pulse 62, feeble and irregular. It is observed that the two front incisor teeth in the upper jaw stand apart, but some doubt exists on the point.

February 2nd. I was summoned to visit him, his sight having been suddenly lost. I was informed that the preceding morning he told his attendants he could not see objects, and this was manifest from the manner in which he took hold of any thing presented to him; his sight, however, returned in the course of the day, but again went suddenly about 8 o'clock the following morning. Both eyes were now fixed and immoveable, with the lids hanging over them. The pupils were perfectly clear. The iris acts in a most irregular manner, at one time appearing to obey the impression of light and again not.

No doubt remained of the separation of the teeth, and a dark-coloured tumour was now discovered occupying the line of the palatine suture; it is firm and elastic to the touch; passing the finger backwards the soft palate is found to be thick and firm, giving the sensation of softened leather. The fungoid nature of the disease was now apparent. From this period all the symptoms advanced rapidly but with regularity; the tumour in the palate extended itself so as to protrude outside the mouth to the size of a goose egg; the eyes lost their brilliancy, for which in health they were remarkable, and were converted into two dark-coloured fungi, protruding in a hideous manner outside the lids; his nose was flattened and spread out upon the front of the tumour, not the slightest elevation or prominence appearing in its place. The nasal and malar bones could be distinctly

felt floating wide apart, upon this spongelike mass of disease. His head was thrown back in order to straighten the passage of air through the trachea and mouth. Liquid food was passed under the tumour and upon his tongue, and although somewhat difficult, the act of deglutition was performed with amazing facility, and what is perhaps equally surprising, he could articulate intelligibly, and in this state was sometimes jocose; his mental faculties remained perfect to the last; he spoke, asked for food, which he took, and gave directions to have his feet warmed a quarter of an hour before he expired, which event took place on the 22nd of March, about three months from the earliest indication of disorder. (See Plate).

Autopsy.—The skull-cap was remarked to adhere with morbid force to the dura mater, by means of exsanguineous ligamentous bands, rather than blood-vessels. The surface of the hemispheres presented a number of blood-vessels, and the arachnoid and subarachnoid tissues had lymph effused in several places. The brain itself was remarkably firm, and on cutting into its cortical parts and the corpus callosum, innumerable red dots marked its high degree of vascularity. The ventricles contained a small quantity of serum, but their walls appeared healthy. Having raised the anterior lobes of the cerebrum, a firm elastic tumour, covered by dura mater, presented itself, occupying the entire extent from the anterior edge of the cribriform plate of the ethmoid bone, to the foramen magnum; in extent and bulk it was fully equal to the segment of a goose egg, being convex towards the brain. In raising the dura mater, which adhered with great tenacity to the subjacent disease, a pale, whitish-looking mass, but little elastic, and in some places semi-cartilaginous, was seen; a section of the tumour displayed some black spots or patches of equal density with the rest of the disease; no trace of bone or other part of the normal structure of the parts appeared in it.

The sutures between the temporal and malar bones were open on both sides, as were all the sutures of the orbit and face; the coronal sutures also gave way, allowing the os frontis to

move backwards and forwards with facility, carrying its orbital process with it, and being perfectly intact, as were all the bones of the orbit, the os planum and os unguis excepted; no trace of these could be discovered. The disease as it presented at the eyes and mouth, was less firm and darker-coloured than elsewhere. The eye itself was totally disorganized, some black matter, which seemed to correspond with the choroid coat and the pigmentum nigrum, was found in the centre of this part of the disease. The nasal bones were perfectly sound, as were the malar and petrous portion of each temporal bone; these last seemed to have a peculiar power of resisting the disease, as they lay surrounded by it. The seventh pair of nerves passed over the tumour and was untouched by it. Some encroachments must have been made by the tumour in the direction of the crura cerebri, but here, as towards the cerebrum and cerebellum, where the greatest convexity of the tumour lay, no mark of undue pressure nor disease could be discovered, beyond what has been recorded, of the other parts of the brain.

The open state of the sutures will explain, in some measure, the manner in which the brain eluded the ill effects of pressure, which must otherwise have taken place owing to the encroachment of the disease upon the cranial cavity; yet as the necessity for this change must have been antecedent to it, and can only be explained on mechanical principles, it is not easy to account for the almost total absence of functional disturbance and pain in this case. Dr. A. Colles who saw this boy after the nature of the case was apparent, informed me of a case, which fell under his observation a short time before, in which, at an advanced period of the disease, in one of the extremities I think, there was no pain from the commencement to its termination. (See Plate).

Thus, we find this disease occupy the entire space from the base of the cranium, a considerable portion of the cavity of which is filled to the mouth, nose, and eyes, finding its way into the frontal sinuses, the antrum of Highmore and pharynx; convert-

ing into its own nature all the soft parts within its reach and the following bones: the entire of the ethmoid and sphenoid bones, except the temporal wings of the latter; the superior maxillary bone, except its orbital plate, nasal processes and the sockets of the teeth, which last were untouched; the basilar processes of the os occipitis, the os unguis, part of the palate bones, and all the spongy and turbinated bones.

Malignant Osteo-Sarcoma of the lower Jaw Bone; Excision and Disarticulation thereof.

Anne Lynch, æt. 47 years, was admitted into the county of Meath Infirmary, June 2nd, 1828. The report taken at the time runs thus: "About twenty years ago she thinks her jaw bone was fractured in the operation of extracting the last molar tooth on the right side; a small tumour soon after formed in the site of this tooth; for the succeeding seven years she enjoyed good health, and suffered but little pain from it: twelve years before her admission at the Infirmary, the part was irritated by a pin which she put into her mouth, becoming imbedded in the part, where it remained for about a fortnight; from this period the tumour extended itself, but so slowly as to give little inconvenience up to the month of May last." The following appearances were noted at the time of her admission.—"The right jaw and side of her face considerably enlarged, the soft parts, however, appear to be perfectly healthy, the disease is confined to the bone, from the alveolar process of which has sprung up a fleshy, wartlike, fungous growth, occupying the space from the second molar tooth, which is reported to have fallen out, to about the angle of the jaw. Caustic was applied to this diseased growth, and having occasion to return to her home, she was discharged, and did not again return until the October following, when it was observed that her general health, which had suffered in a slight degree previously, was now fast declining. She looked sallow and worn, cachectic, her nights were restless from repeated paroxysms of sharp, lancinating pain; the tumour had

increased considerably, and the flesh-like excrescence already described turned inwards upon the tongue, impeding in some measure articulation and deglutition ; the tumour bled on touching it, and gave out a thin, fœtid sanies.

Having decided upon the removal of the disease, the operation was performed on the 6th of October, in the following manner :

The patient being seated in a chair, with her head thrown backwards, inclining to the left side, and supported by an assistant, the incisor tooth on the affected side was extracted. Having divided the prolabium and soft parts down to the bone, in a line with the socket of the extracted tooth, the incision terminated about a quarter of an inch below the chin. The next incision commenced a little anterior to the lobe of the ear, and terminated over the angle of the bone, about a quarter of an inch from its lower margin. Those two incisions are united by a third, extending from the last-named point to a like point of the first incision. Having divided the bone with a common amputating saw, in a line with the first incision, the integuments and muscles are dissected upwards towards the mouth, and downward upon the neck, so as to disengage the tumour as far backwards as the angle of the jaw, where the bone was again divided by a chain saw passed close to the bone from below upwards, and worked from within upwards and outwards. A few strokes of the saw were sufficient to effect the division, the bone being found to consist of a thin shell only at that part. As the entire of the disease was not included in the detached piece, it was deemed necessary to remove the ramus with the articulating extremity of the bone, and accordingly the temporal muscle was first divided at its attachment with the coronoid process; to effect this the bone was depressed by the fore-finger and thumb of the left hand, and thus the pterygoid muscles and capsular ligament were subsequently divided. Some delay and difficulty arose at this stage of the operation, but were speedily surmounted by fixing a strong hook into the articulating extremity of the

bone, upon its anterior aspect, and thus forcibly drawing it forwards, rupturing its posterior adhesions, and avoiding the necessity of cutting in so perilous a position. No compression was made upon the carotid artery, nor was it in any way molested. The divided extremities of the facial and transverse facial arteries were secured; there was but little venous hæmorrhage, and the patient lost altogether about ten ounces of blood. The lips of this hideous wound were brought together by a few stitches of the interrupted suture; no charpie nor lint was put into it. She bore the operation well, although it occupied a space of twenty minutes in the performance, and she afterwards walked from the operation room to her bed. Water dressing to the wound and an anodyne draught were ordered.

Two hours after the operation I was summoned to visit her, on account of bleeding, which, however, proved to be but trifling, and was easily arrested by directing a current of cold water to the part for an hour or two.

Examination of the Disease.—"The bone is enlarged to about the size of a turkey's egg, but of an irregular oblong shape, extending from the first molar tooth to the articulating extremity of the bone; the greatest size being about its centre. The bone is hollowed out, so much so as in some places to be as thin as paper, and it was totally absent on the aspect of the alveolar process, which was occupied by the foul excrescence already described. This latter was continuous with and sprung from a mass of disease of the following description, which occupied about two-thirds of the cavity above described. Its surface in some places exhibited an extremely minute arterial vascularity; smooth, but irregular and tuberculated. The part traversed by the chain saw was made up of soft, brain-like matter, combined with a more firm granular substance, containing various cysts, the walls of which were made up of spiculæ of bone, so firmly compacted together in some places as to resist the scalpel, whereas another of those bony cells, or it might be a portion of one only, allowed the knife to

pass freely through it, presenting in those places a semicartilaginous appearance. Those cysts contained a firm, white, gelatinous substance, which, however, was easily removed, leaving the walls or internal surfaces smooth, white, and irregular." See the accompanying plate, which was taken from a wax cast now in the Museum of the College of Surgeons, and was executed from the recent specimen, under the eye of the late Dr. J. Browne, who was present at the operation, and gave me the benefit of his valuable assistance.

This affords a good specimen of encephaloid cancer, combined with calloid (matière calloid of Laennec, cancer gelatiniforme or areolaire of Cruveilhier), a combination by no means common; and if we believe those who assert, that encephaloid carcinoma always relapses,* a favourable termination might not have been expected in this instance.

The above was the fourth operation of excision and disarticulation of the lower jaw bone performed in Ireland, and the first and only one ever performed in the provinces.†

Cases of this kind are comparatively few in number; yet this achievement of modern surgery has been undertaken, and, for the most part, successfully executed, in several instances where the nature of the disease and the condition of the patient were favourable. It has been performed three times by Mott of Philadelphia; three times by Mr. Cusack, at Madame Stevens's Hospital, Dublin; once by M. Gansoni, at Lyons; and once or twice by Graffe of Berlin; once at La Pitié; once by

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* Cyclopædia of Practical Surgery, p. 640.

† Some explanation seems necessary, not having published this case sooner. It did not at that time seem to possess any new features of interest, either as regarded the operation itself, or the disease for which it was undertaken; the one appeared sufficiently plain, and the other so unintelligible as to admit of no illustration from an apparently isolated case; passing events, however, seem to have rendered it of interest in both ways, and by postponement it has the additional value of my being able to say, that the subject of the disease is now, eleven years after the operation, in good health.

Mr. Hetling, Bristol; once by Mr., now Sir B. Brodie; twice, I think, by Mr. Liston; and once by A. T. S. Dodd, Esq., Chichester.

We are told by Baron Dupuytren, "the boldness of surgeons did not stop here (*Archieves General*, tom. xiv.), that Walther and after him Graff (*Journal Hebd.* tom. iv.) have removed the whole of the lower jaw bone by disarticulating it on both sides; Walther had previously tied both carotid arteries:" these facts, he adds, "appear almost incredible."*

Baron Dupuytren himself, however, was the first surgeon who removed a portion of the lower jaw bone in the year 1812. Since that period several cases of this minor operation have been recorded. The most remarkable are, first, a case by M. Lalamond, at the Saint Eloi Hospital;† it is styled a "bold and bloody operation," the patient having nearly expired from loss of blood and retroversion of the tongue upon the pharynx and epiglottis. The bleeding was arrested by the actual cautery; the operation of tracheotomy was performed, and thus the patient's life saved. Cases by Mr. Cusack, and Mr., now Sir P. Crampton,‡ Lisfranc,§ Delpech, Mr. Leland,‖ Liston,¶ and a case by Dr. Bull, of the South Infirmary, Cork.** Notwithstanding the great majority of the above cases proved successful, still, strange as it must seem, the operation is regarded by many, especially in France and Germany, as affording slender

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* Lancet, Oct. 1833, p. 61; Journal Compliment Mars, Oct. 11, 1823.

† Journal of Dr. Johnson, July 1st, 1830, p. 550.

‡ Dublin Hospital Reports, vol. iv. § Rep. Hosp. Perfect. No. 9, 1827.

‖ Lancet, Oct. 1833, p. 61. ¶ Operative Surgery.

** Lancet, Sept. 28th, 1839. Dr. Bull claims the honour of being the first provincial surgeon in Ireland, who excised the inferior maxilla; Dr. John Colvin, however, informs us (Lancet, Oct. 26th, 1839, p. 164) of that operation having been performed by Dr. Robinson, of the Armagh Infirmary, assisted by himself, upwards of seven years previously; but as the only incident in the case worthy of note was the "breaking of a very expensive and finely fabricated chain saw," the honour of having performed the most interesting operation may fairly be awarded to the former gentleman.

hopes of escape for the unhappy patient; we are told, for example, the operation should not be undertaken but to dispel the gloom of utter dispair: "Pour les derober à cette terrible extremite (desespoir) que nous croyens le chirurgeon autorize à operer."*

This opinion was expressed in 1824, and, although dissented from at the time by Delpech, no formal denial of it has since been given in that country; the great majority of pathologists still admit the incurable nature of osteo-sarcoma, and without pointing to any form or period of that disease when the operation of excision was likely to be successful, have confounded it with other diseases, such as spina ventosa, epulis, exostosis, fungus hæmatodes, and carcinoma.

Some explanation of this fact may be found in the acknowledged difficulty of the subject, and a too great eagerness to reduce this class of disease to the level of some preconceived theory, and thus render our nomenclature unintelligible, and worse than useless.

It is believed, for example, that fungus hæmatodes and cancer may lapse alternately into each other; that both may have a benign or malignant origin, and without giving clear or distinctive notions of either, we are told that no age, sex, nor condition of body exempts from their invasion. In confirmation of this position, I would refer to the works of Andral, Cruveilhier, Heasinger, Muller, and others; and as a proof that those opinions are not confined to France and Germany, I would point to the systematic arrangement of Dr. Carswell, as being English, and based upon anatomico-pathological principles, it may be regarded as the freest from objections of every kind. "Numerous examples," he says, "might be given of scirrhus, medullary sarcoma, and fungus hæmatodes, as they are commonly called, originating in the same morbid state, and passing successively from the one into the other in the order in which I have mentioned them.

* Histoire des progrès récens de la Chirurgie par R. Richerand.

Who can glance at the above authorities, and contrast their sentiments on this subject with the recorded cases of osteo-sarcoma of the lower jaw bone, and not be struck with the triumphant refutation which these facts afford of those opinions, especially as regards fungus hæmatodes and cancer? Who, for example, will be so bold as to assert that he ever saw malignant fungus of the head or face cured permanently by operation, or any other means?* And it is equally difficult to contrast the pathological specimens of cancer of the bones to be found in our museums, and painted by various authors, with malignant osteo-sarcoma of the lower jaw bone, and refuse our assent to the opi-

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* Graffe, it is said, has often extirpated fungus hæmatodes, without any relapse having occurred for sixteen, eighteen, and twenty years. Gazett. Med. de Paris, p. 170, Mar. 1835. This statement appears incredible, and, no doubt, those and like cases, said to be malignant fungus, and reported to be cured by operation, were either mild or malignant osteo-sarcoma, previous to the contamination of the soft parts, or fibrous erectile tumours growing from the periosteum, or the lining membrane of the antrum of Highmore. This proposition becomes more probable by referring to the cases cured by the excision of the superior maxillary bone, as first proposed by Gensoul, and practised by Mr. Syme, Guthrie, &c. See also cases by Makenzie (Treatise on Diseases of the Eye, edit. 3, 1840, p. 68), where the eyes were displaced by tumours of the antrum, said to be fungus. The patients, however, were restored to sight and health, the morbid masses having been removed.

No physical change is here reported to have taken place beyond what might be ascribed to the effects of mechanical pressure; whereas malignant fungus (such as I have recorded) converts all soft parts and most of the bones which come in contact with it, into one "strange distempered mass," partaking of properties, however, which cannot be mistaken as belonging to that malady, which hitherto has bid defiance to human art.

An old medical friend, Dr. Colles, rich in honours as in years, conversing on this subject lately, related the following anecdote, illustrative of the tact well known to exist amongst surgeons in this country at present relative to this subject. The late Surgeon M'Evoy, of Dublin, in consultation with him, then a young man, and at a period antecedent to Mr. Hay's Essay on Fungus Hæmatodes, was in the habit of thus diagnosticating this disease: "You may operate," he would say, "upon that puffy cancer; it is the custom of the day to do so; but it will surely return and destroy life." Subsequent experience, one would think, was sufficient to remove all doubt on this subject; our wonder is that it has not done so.

nion of Boyer, that cancer and malignant osteo-sarcoma are one and the same disease.

Epulis cannot be confounded with the malignant diseases of the maxillæ but by the most careless and inexperienced. Those tumours are not, even in their most advanced stages, inclined to contaminate the parts in their neighbourhood; if freely removed they do not return.*

A soft tumour of the gum, rapid in its growth, broken on its surface, and furnishing fœtid and bloody discharge, is sometimes, it is said, met with; there is no danger of mistaking the one kind for the other, the remediable for the malignant; fortunately the latter is rare; always appears upon the upper jaw, and is, no doubt, fungus hæmatodes. I perfectly agree in the following statement of Mr. Liston.—"I cannot recal to my recollection, any case that I have seen of decidedly malignant disease springing from the gum."†

Spina ventosa and benign osteo-sarcoma, appear to be synonymous terms. The former used by Boyer is most applicable to those cases where the tumour is made up of bony matter, with no contained medullary fibrous or cartilaginous substance, as usually happens when the subject of the affection is advanced in life; the latter applies to that form, which, when cut into in the early stage of the affection, presents a fibro-cartilaginous appearance, surrounded by a thin shell of bone; a good specimen of this form of the complaint is well described and figured by Mr. R. Adams, as occurring in the phalanges of the fingers and metacarpal bones of the hand.‡ Similar cases are recorded by Sir Philip Crampton, Sanson, &c.

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* See a case supposed to be epulis of great size recorded in the Lancet, vol. i. 1836–7, p. 237, and alluded to and figured in the Medico-Chirurgical Transactions, vol. xx. p. 198.

† Liston's Surgery, p. 268.

‡ Cyclopædia of Anatomy and Physiology. M. Hemizo (Outlines of Human Pathology, 1836) speaks thus of exostosis, p. 14: "Osteo-sarcoma is well described by the term Cartilaginous Exostosis."

It would appear that these cartilaginous degenerations of the lower jaw bone, sometimes described under the denomination of exostosis, frequently assume the form of cysts, and are identical with the benign or mild osteo-sarcoma;* and it may be further remarked, that a striking analogy exists between those structural changes in bone and chronic cysts in the soft parts; such for example as are described by Sir A. Cooper, and found in the breasts of females. This opinion gains weight by a comparison of their essential or elementary properties: but still more by the remarkable fact that both, if left to their natural course, are apt to assume a malignant character at a particular period of life, and under similar circumstances, the one acquiring the nature of scirrhus or cancer, the other malignant osteo-sarcoma. And it is worthy of remark, that, although examples of benign osteo-sarcoma are to be found occurring in subjects considerably advanced in life,† no instance, as far as I know, can be adduced where the malignant form of that disease affecting the lower jaw bone, set in before the twenty-eighth or thirtieth years of age. Sir A. Cooper, speaking of encysted tumours in the female breast, says: "Although these tumours are not in their commencement malignant, and they continue for many years free from the disposition to become so, yet if they remain until the period of the cessation of menstruation they sometimes assume a new and malignant action." He further adds, "but as the scirrhous tubercle is rarely seen under thirty years of age, so does this disease seldom happen after thirty."‡ Sir A. Cooper does not say that those tumours, when malignant, were other than scirrhous, or that any of them having put on these characters ever afterwards changed into fungus hæmatodes.

The following case by Sir Philip Crampton§ affords a good

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* See a remarkable case of this kind by Mr. Travers (Surgical Essays, p. 174). The patient, Maria Ledwich, was destroyed by the size of the tumour alone.

† Of this kind was the case of Mahony (op. cit.) by Mr. Cusack.

‡ Illustrations of Diseases of the Breast, p. 63.

§ Op. cit.

example of malignant-osteo sarcoma in its most advanced stage. "A man about 50 years of age, who had a large osteo-sarcomatous tumour proceeding from the angle of the lower jaw. Inferiorly the tumour was formed by large, soft, bleeding fungus, not unlike a soft wart, in which the molar teeth were included, and which poured out a sanies having an insufferable fœtid smell. Externally the skin was hard, slightly tuberculated, adherent to the tumour, and in parts of a dull purplish colour." &c. It was wisely determined not to operate in this case, but we must regret no report is given of the pathological condition of the bone.

The case I have recorded also affords a good specimen of the malignant form of this disease, before the soft parts became implicated. By contrasting this with those cases where the soft parts are involved, a practical rule of great value becomes apparent, namely, that in the one, excision of the part would be cruel and calculated to bring the science of surgery into disrepute; whereas in the other, even in its most extended form, the soft parts not being implicated, the operation is safe and almost certain of success, provided the patient has sufficient strength to endure it.

The question naturally arises, what are the symptoms of malignant osteo-sarcoma, and how are we to ascertain the precise time when the change from benign to malignant takes place? In the present state of our knowledge, and previous to the appearance of the fungous growth from the alveoli or the implication of the soft parts, our experience of those symptoms which mark cancer in other obscure parts of the body must be our only guide.

The following inferences are fairly deducible from what is known on the subject of osteo-sarcoma of the lower jaw-bone:

1st. The disease almost always commences in the cancellated structure of the bone, and has usually, if not always, a cystic origin, which it maintains, more or less perfectly, throughout its entire growth.

2nd. The disease is always (as far as recorded facts go) mild, under the ages of 28 or 30 years, and although it does not necessarily become malignant after that period of life, still it frequently does so; ultimately involving the soft parts in its neighbourhood, and *uniformly* assuming the characters of carcinoma.

3rd. Osteo-sarcoma of the lower jaw-bone is almost always curable by free excision before the soft parts become involved in the disease, which they never do in the benign form of the disease, nor for some time, often several months, after it has changed into carcinoma, or the malignant form.

4th. That cancer of the face, especially the bones, admits of cure more frequently than when seated in any other part of the human frame; cancer scroti, chimney sweepers' cancer, perhaps excepted.

5th. Ligature of the carotid artery is unnecessary previous to, or during the operation of disarticulation of the jaw-bone, as exemplified in Mr. Cusack's cases and mine.

6th. Stuffing the wound with charpie or lint seems to be in most cases unnecessary, and if permitted to remain in the wound beyond eight or ten hours, would most likely excite undue inflammation. No contrivance seems requisite to prevent a retroversion of the tongue upon the pharynx and epiglottis when the bone is divided posterior to the mental attachment of the digastric and anterior fibres of mylo-hyoidei muscles, as will generally be the case, nor will any contrivance prevent the trifling retraction of the muscles of the face occasioned by their division and want of support.

ART. XIV.—*Cases illustrative of the Uses of some of the Combinations of Iodine, with Remarks.* By GERALD OSBREY, A. M., M. B., Licentiate of the Royal College of Surgeons, Ireland; Physician to St. Mary's Dispensary.

TO THE EDITOR OF THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

11 Clare-street, May 20.

SIR,

You will oblige me by publishing the paper by Dr. Osbrey, now in your hands.

Your obedient Servant,

M. DONOVAN.

May 20, 1842.

DEAR SIR,

It is with much pleasure that I send you the following cases, illustrative of the uses of some of the combinations of iodine, with remarks on them. I have commenced with those in which I prescribed your compound mixture which you have termed, the "*Liquor hydriodatis arsenici et hydrargyri*," which has proved to be a most useful remedy in the practice of my dispensary. I have also alluded to the use of the syrup of proto-iodide of iron, which you have prepared. I have been obliged to review in my paper some of the leading points mentioned in the excellent articles on the uses and actions of iodine, in Dr. Christison's new Dispensatory, as the facts deducible from the cases which I have furnished, are so identified with what has been there stated. The subject on which I have written may prove interesting to those who, like myself, are daily engaged in the extensive practice of a dispensary.

Believe me, dear Sir,

Yours very truly,

GERALD OSBREY.

Michael Donovan, Esq.

OF THE USE OF MR. DONOVAN'S COMPOUND MIXTURE IN INVETERATE PSORIASIS.

Susan Atkins, æt. 9, native of London, was registered as a patient at St. Mary's Dispensary, July 31st, 1840.

This patient, when her mother brought her to the dispensary for relief, was affected with diffuse psoriasis, which engaged almost her entire body, the scales on the extremities being continuous and remarkably thick. Her mother stated that it was nearly two years since she was first seized with the disease, and that she had been under the care of several practitioners in London, but had received no relief.

Having tried, without making any impression on the disease, other remedies, I ordered her the following mixture, containing the liquor hydriodatis arsenici et hydrargyri, as prepared by Mr. Donovan.

℞ Aquæ distillat. ℥ viii.
Liquoris Hydriodatis Arsenici et Hydrarg. gutt. lxxx.
Tinct. Zingiber. ℥ ss.
Sumat unciam misturæ omni tertiâ horâ.

When she first commenced the use of this mixture she was seized with slight sickness of the stomach, but it soon ceased to produce this effect on its being suspended for a few days. Ten days after the commencement of its use the eruption began rapidly to decline upon the trunk, and the thick scales to loosen on the extremities. To accelerate the separation of the scales upon the extremities and head, I applied an ointment consisting of equal parts of tar and dilute citrine ointments. For five weeks from the commencement of the use of these remedies, she improved in health, but after that period her appetite declined; she fell away in flesh, and her countenance became pallid. The use of the mixture was of course discontinued. All traces of the eruption had then disappeared from the surface of the trunk, and only a few patches remained on the extremities.

Her mother, at my request, now sent her to the country,

where she continued to use mild tonics which I ordered her for a few weeks. When she returned to town, as she had completely recovered her health and flesh, I recommenced giving her the mixture, which, when she had taken for three weeks, she discontinued, as no trace of the disease now remained.

This case I considered as one of particular interest, from the circumstance of the disease being of so aggravated a nature, of a duration so considerable, and from its having resisted every other remedy which had been used. I tried previous to using Mr. Donovan's mixture, the iodide of potassium, Fowler's arsenical solution, mercurial alteratives, sarsaparilla, guaiacum, with carbonate of soda, and other remedies, without making the slightest impression on the complaint. We are taught from this case that we should be watchful during the use of the solution, emaciation and other symptoms having presented themselves in the progress of the cure. These, I am aware, it may be said, might have arisen from the impression made on the system by the disappearance of an eruption so extensive and of such long duration; but I think that they ought rather to be attributed to the use of the remedy, inasmuch as they ceased on its discontinuance. With regard to the use of arsenical remedies protracted for several months, for the cure of inveterate psoriasis, M. Billard, in his work on Diseases of Children, quotes the following remark of M. Rayer: "Outre qu'il nous parait peu rationnel de soummetre à un traitement arsènical des malades affectès de psoriasis invetérés dans le faible espoir de produire une amelioration passagère et avec la crainte non moins fondèe de porter quelque derangement dans les organes interieurs ou dans la constitution." This is an excellent remark, which, though it ought to render us cautious in the use even of Mr. Donovan's preparation, still I do not think it ought to prevent us prescribing it for the period mentioned in the foregoing case, when less powerful medicines have been found to fail. We should recollect that the patient is affected with a disease which renders life burdensome, and for which we would even be justi-

fied, should we have any reasonable hope of effecting a cure, in subjecting the patient to some risk, the more so as it is most probable, when the disease is of so aggravated a nature, as in the case which I have given, he will fall a victim to it if it be allowed to continue unrelieved.

After the cure of eruptive diseases, it is recommended by some writers to establish issues. This practice is very questionable with regard to children, in consequence of the irritation which they are apt to produce, and also from the chance they have of becoming unhealthy ulcers. It is also very difficult to make patients of the lower orders of society attend to the dressing of them.

I saw the little patient whose case I have given eight months after the disappearance of the eruption; her health was then excellent; and there was at that period no return of the disease.

I treated three other cases of scaly eruptions with the same remedy. The patients were: Frances Foran, æt. 26, registered May 26th, 1841; Denis Cloony, æt. 48, August 27th, 1841; Jane M'Connel, æt. 19, January 27th, 1841.

The first of these was affected with a diffuse scaly eruption for a few weeks previous to her applying at the dispensary. I suspected it to have been of syphilitic origin, as it closely resembled the common syphilitic scaly eruptions. I could not, however, from the history of the case obtain any clue to its being so, as the patient was most anxious about her character, being a servant in place. When she had used the remedy for about ten days, in the same doses as in the previous case, the eruption and redness of the throat disappeared to the great joy of the patient, who was on the eve of being dismissed by her mistress.

On the eruption being cured she discontinued to visit the dispensary. I heard nothing more of her since, so I cannot say if there were any return of the disease.

In the second case, that of Denis Cloony, the remedy was exhibited with equal success. The eruption, which consisted of

scaly patches on the back and abdomen, also resembled the syphilitic eruptions. In this case there was pitting after the cure. Both these patients were seized with slight sickness of the stomach when they first commenced the use of the medicine.

The last of these three cases, Jane M'Connel, was affected with several thick scaly patches on the extremities for a twelvemonth previous to her applying for relief. These also disappeared when she had used the medicine for about three weeks. In this case I found it necessary to assist the separation of the scales by the application of the tar and citrine ointment. She did not complain of any sickness of the stomach, though she used the mixture in doses of twenty-five drops three times a day. With regard to the nausea, frequently produced when the medicine is first exhibited, I should mention, that it appears to me generally to occur in cases which terminate favourably. By suspending the use of the medicine, and again resuming it, it will in most cases cease to give rise to this effect.

On making inquiry six months after the cure of the eruption I found that Jane M'Connel had suffered from no return of the disease.

I also ordered this medicine in a case of button scurvy. The patient, Anne Fitz Gerald, æt. 12, was registered on the books of the dispensary, June 2nd, 1841. She and her sister were under my care six months previous to the above date for this complaint. Her sister was completely cured by the internal use of iodide of potassium, and the local application of the tar and citrine ointment; but successful as these remedies proved in this case, they completely failed in producing any beneficial effect upon Anne. I afterwards gave her mercury until her gums were affected; but with like bad success. After my failure, she was subsequently under the care of others, who were as unsuccessful as myself. As I had relieved her sister, her mother brought her to the dispensary again in the hope that I might ultimately succeed.

On her last application to the dispensary, I brought Dr. Ha-

milton with me to see her; he agreed with me that the disease was button scurvy, and recommended me to try the decoction of sarsaparilla, with an eighth of a grain of corrosive sublimate three times a day. As I had prescribed for her this remedy before, I was unwilling to have recourse to it again; so I ordered her the liquor hydriodatis arsenici iodidi et hydrargyri, in the same manner as I did in the first case which I have given. By this treatment she was completely cured in a month; no derangement whatever of her health having been produced.

The next case of interest, in which I ordered this preparation, was a very obstinate case of lichen urticatus, which had been mistaken for itch, and for which she had been a long time treated by the internal and external use of sulphur. The child who was affected with the disease was about six years old; she was most signally relieved by the exhibition of the medicine in doses of six drops three times a day.

The last case that I shall allude to with regard to the use of Mr. Donovan's preparation, was that of a very obstinate case of scrofulous ophthalmia, in which I found this medicine very serviceable, so that, as far as we may venture to conclude from a single case, it is probable that it may form a useful addition to the many remedies that are used in that very troublesome disease.

I have given these cases as being more particularly interesting, though I have used the liquor hydriodatis arsenici et hydrargyri with success in many other affections of the skin, such as the more aggravated forms of Ephelis, Pytyriasis, &c. In these complaints it is probably a much safer remedy, particularly when its physiological effects are carefully attended to, than any external application that can be prescribed. I generally order the more simple internal remedies first, particularly the iodide of potassium, and do not have recourse to it until they fail. My principal reason for doing so is the difficulty of carefully watching patients in dispensary practice while under the use of it.

SYRUP OF PROTO-IODIDE OF IRON.*

I have not used the syrup of proto-iodide of iron which Mr. Donovan has prepared, in very many cases as yet; but the few in which I prescribed it were signally relieved. In two cases, in particular, I found it to be very serviceable. One was a very obstinate case of scrofulous ophthalmia, in a child of four years old, who was completely cured by the use of it. The other was that of a child who had long suffered from tumefaction and ulceration of the lower lip. The swelling was very indolent, and no remedy which had been administered for it, whether topical or general, had rendered any relief until the syrup of proto-iodide of iron was used, which quickly effected a cure. The doses which were given in both these cases were ten drops three times a day. In giving the medicine no metallic spoons were used; it was generally given to the child on the edge of a wine glass.

This remedy I have found in some cases to have produced sickness of the stomach.

USE OF THE IODIDE OF POTASSIUM.

I shall terminate this paper by giving a selection of cases in which I have used the iodide of potassium, so admirably adapted as a remedy for many diseases, that present themselves to the notice of the physician, in dispensary practice; such as secondary syphilis, chronic rheumatism, the subacute stages of acute rheumatism, mercurial cachexia, scrofulous ophthalmia, the subacute stages of other forms of ophthalmia, diseases of the skin, and many other complaints. It is the more useful in dispensary practice, as it does not require that careful watching of its effects on the part of the practitioner which the more active combinations of iodine demand. It is for this reason that I generally order the iodide of potassium, without combining it with free iodine. The effects I allude to have been fully described by Dr. Christison, in the excellent articles on the ac-

* The strength of this mixture is 4 gr. iod. po. to the oz. of syrup.

tions and uses of iodine and iodide of potassium, in his new work, the Dispensatory. In the first of these articles, he makes the following statements, p. 555: "The most remarkable effects of iodine are produced, when it is taken for a long time in frequent small doses. The series of phenomena thus induced have been generally thought to be connected with a peculiar constitutional state to which the name of iodism has been conveniently given." He then describes the symptoms of this state when it is developed characteristically, and adds that, "the affection," so termed, "may prove fatal, if the iodine be not abandoned in time, but that it generally recedes soon after the doses are given up. In the early stage of it a variety of interesting physiological and therapeutic phenomena are often manifested. Not unfrequently there is an increased discharge of bile; and the liver, if gorged or hypertrophied, undergoes sensible diminution.* Often too the mucous membrane of the nostrils becomes inflamed, exactly as in a cold in the head. Sometimes the pulmonary mucous membrane is similarly affected. There is often diaphoresis, and occasionally an eruption of pustules. An increased discharge of urine is also not uncommon. He then states that it is not impossible that some of the effects here described, as tending to manifest themselves in the early stage of iodism, may occur before that state is brought on; but they appear to be most characteristic, and to arise with the greatest certainty contemporaneously with the first unequivocal indications of iodism, giddiness, headach, and uneasiness of the stomach. The nature of the symptoms constituting iodism led at first to the supposition, that iodine, like mercury, lead, and digitalis, is a cumulative medicine. This, however, seems doubtful. At all events, iodism does not increase like mercurialism after its cause is no longer in operation. The risk incurred from it has been much exaggerated by some; for it may be kept easily under by suspending the use of iodine."—p. 755. Again, in the article on

* This effect of iodine was first noticed by Dr. Elliotson, and subsequently by Dr. Graves.—Ed.

iodide of potassium, he mentions, that "iodide of potassium, when taken continuously for a length of time, occasionally excites ptyalism, sometimes an affection like cold in the head, sometimes catarrhal cough, thus showing a tendency to act remotely as an irritant of the respiratory mucous membrane. Doubts have been entertained whether, in the like circumstances, it has the property possessed by iodine of inducing iodism. Though the current opinion would seem to deny to it any such power, I apprehend the real fact to be, that iodism may be induced by it in some constitutions easily enough, and sooner or later in most persons, if sufficiently large doses be taken for an adequate length of time; but that its power in this respect is greatly inferior to that of iodine. At all events iodide of potassium has been known actually to excite disturbed digestion, a tendency to diarrhœa, emaciation, nervous irritability, tremors, and on one occasion even absorption of the mammæ, which are the leading features of iodism. Whether the alterative and deobstruent properties, conceded by most observers to this salt, depend or not upon its iodismal action, is a question which cannot at present be answered." I have made this extract from Dr. Christison's work as the authority is so high, the work so modern, and the details of the actions and uses of iodine so fully set forth. I shall make a few remarks on what I have quoted, previously to giving the few cases I have selected, illustrative of the use of iodide of potassium, as the cases bear strongly on the points mentioned by Dr. Christison. The subject is very important, as it is not by the indiscriminate use of any remedy, however intrinsically useful it may be, that it will rise in estimation, but by a careful observation of when it acts to advantage, and when deleteriously on the system. Mercury, by the neglect of this rule, fell into disrepute, with regard to the treatment of syphilis. To this fact Dr. Colles has forcibly drawn the attention of practitioners, in his able work on the Venereal Disease, in which he has laid down such excellent rules for the proper administration of mercury. Dr. Colles divides the effects of

mercury on the constitution into its *legimate or specific* effects, and into its effects as a *poison*. The former he describes as indicated by its exciting ptyalism, the latter by the production of mercurial erethism, mercurial erythema, mercurial itch, and excoriation of the scrotum and thighs. In addition to these there may be a third form, independent of the corrosive effects of the more powerful combinations of mercury, in which it may act deleteriously, which is intensity of its specific or legitimate action indicated by hypersalivation. Dr. Christison seems to include all these effects under the term *mercurialism*. Is it not probable that careful observation may lead us to the conclusion that iodine may have analogous effects on the constitution? Dr. Christison, I think it may be collected from the above extract, appears to be somewhat of that opinion; for, though in the commencement of the extract he sets down *coryza*, ptyalism, catarrh of the lung, and diaphoresis, as symptoms indicating the commencement of iodism, still he immediately afterwards adds, "that it is not impossible that some of the effects here described as tending to manifest themselves in the early stage of iodism, may occur before that state is brought on;" and in the latter part of the extract he seems more fully to admit it, for he mentions these effects may be produced by the use of iodide of potassium, and then states: "Doubts have been entertained whether it has the property possessed by iodine of producing iodism; from thence it appears to me, that he evidently draws a distinction between these two classes of symptoms.

In the practice of a dispensary, unlike that of an hospital, it is not easy to make accurate observations, in consequence of the great labour attendant on visiting the patients at their residences. For the want therefore of a sufficient field of observation, I am not entitled to arrive at the conclusions I wish. Whatever cases I have had, however, under my care, I think go far to justify us in concluding, that there is a legitimate or specific action of iodine similar to that of mercury, indicated by the occurrence of coryza, ptyalism, and diaphoresis, and perhaps other symptoms;

and also an EFFECT in which it acts deleteriously on the constitution, the symptoms of which have been so fully set forth by Dr. Christison under the denomination of iodism; this effect no doubt is analogous to mercurial erethism, being characterized by emaciation, muscular weakness, anorexia, palpitations, weak pulse, tremors, &c. &c. Dr. Christison also mentions an eruption occurring from the use of iodine, which I have not noticed in any of the cases under my care. This eruption may perhaps, on further observation, be found similar to mercurial erythema. Having never remarked iodism to have occurred to any patient that came under my own observation, I do not know if iodism obeys the same law which Dr. Colles ascribes to mercurial erethism, that is, of never occurring in any case in which its specific action was fully established. If these notions should prove correct, the analogy between the physiological actions of iodine and mercury is very remarkable. We have the legitimate or specific action of iodine, its poisonous action, iodism, and iodic erythema, similar to the specific action of mercury, mercurial erethism, and mercurial erythema, and I shall show hereafter that iodine, exactly like mercury, may act deleteriously by the intensity of what has been here termed its specific action.

Dr. Christison describes coryza and ptyalism, merely as occurring when iodine or iodide of potassium "has been taken continuously for a length of time." I have no doubt, from Dr. Christison's authority, that there are cases, in which these effects may not occur until iodine or its combinations have been for some time under use, but in almost all such as I myself prescribed the iodide of potassium, it produced them, at least the coryza, at the very commencement, and all practitioners to whom I have spoken on the subject have made the same observation. One of the cases that I shall furnish, which has been given to me by Dr. Battersby of this city, confirms this fact. Dr. B. had assisting him, in consultation, a surgeon of high eminence. If then, those effects take place generally at the commencement of the use of iodine, or its combinations, and iodism does not take place

until after its continuous use, there is a marked distinction between those groups of symptoms *quoad* the period of their occurrence.

When the early effects of iodide of potassium manifest themselves, I generally make the patient either diminish the doses or suspend its use for some short time, after which in most cases it ceases to produce such effects; some of my friends, amongst them Dr. Wilde, inform me that they find the coryza and ptyalism induced at the commencement of its use to wear off, even though the doses be continued without any diminution or suspension; notwithstanding this, I think it judicious either to suspend or diminish the doses, lest too intense a degree of salivation be produced, as took place in the two following cases, with the outlines of which I have been kindly favoured by Dr. Battersby and Dr. Nelligan. The former informs me, that very severe salivation was induced in a few days, in a child of about two years old, by the use of iodide of potassium in the small doses of half a grain to an ounce of water three times each day. In this case the tongue was very much swollen, and the mucous membrane of the mouth extensively ulcerated. Dr. Nelligan's case was "that of an elderly lady of rank, who was affected with symptoms of irregular gout. Dr. N. having consulted with a surgeon of the highest character, prescribed a mixture containing the iodide of potassium in such quantities that five grains of the salt were to be taken three times a day; towards the evening of the second day her face and tongue began to swell, and she was affected with severe headach, urgent thirst, but no secretion of saliva; on the third morning the medicine was discontinued, and in the course of that day she was violently salivated, when the thirst and headach ceased, so severe was the salivation, that the gums and tongue were ulcerated." The effect that was here produced in the case of iodine is very similar to an effect sometimes produced by mercury, which has been so graphically described by Dr. Colles in his second chapter (p. 54), on the administration of that remedy; the limits of this paper do not admit of the passage being extracted.

To this property of iodine, of exciting so early its specific action on the system, the prompt relief that it affords in most diseases for which it is given is most probably attributable, and perhaps it may be owing to the same cause that the benefit which arises from it in syphilitic diseases so frequently proves but temporary. Most surgeons have noticed that syphilis is very apt to relapse, even when mercury is exhibited, in those constitutions in which its specific action is too early induced, and that it is not to be desired that ptyalism should occur very early in the treatment of any syphilitic case, with the exception, perhaps, of iritis. This early occurrence of the peculiar effects of iodine renders its use in some diseases highly hazardous, for instance, in cases of catarrh of the lung, with great accumulation of mucus in the chest, and general dropsy. If that remedy were administered with the view of relieving the dropsy by its diuretic property, it might, by inducing a sudden and increased secretion of mucus, cause sudden death; even mercury, useful from its antiphlogistic and other properties, must in such cases be used with the utmost circumspection, and judiciously combined with expectorants and diuretics. Irritability of the stomach and diarrhœa also contraindicate the use of iodide of potassium, or if used in such cases it should at least be combined with opium.

That it is not in every case absolutely necessary that the peculiar action of iodine and some of its combinations should occur, in order that it produce its beneficial effects, I think must be allowed; but at the same time it seems to me, that in those cases in which it takes place, it affords more prompt and greater relief to the patient. Dr. Colles, who lays great stress upon the specific action of mercury being induced, in order that it may act beneficially, admits in his work (page 57), that he has "met with eight or ten individuals who appeared to be wholly exempt from the influence of mercury as a sialogogue," and that "these persons were cured of their venereal complaints;" and states, "that it appears a remarkable fact, that their primary symptoms yielded exactly in the same manner, though at later periods, as

in those patients whose constitutions evinced the influence of mercury on the salivary system ;" he presumes, that " such constitutions are very rare indeed." In the same manner, in the use of iodine, cases will occur in which it will give marked relief, and perhaps much oftener than in the instance of mercury, without producing any appreciable physiological action ; but this is no reason why we are not to augur favourably from the occurrence of such effect.

It may be perceived from the extract I have made from Dr. Christison's Dispensatory, that he considers it doubtful as to iodine being a cumulative medicine, but in his less recent work on Poisons, he appeared to be of opinion that it was so (page 174, 2nd Edition), for he there observes, "that like mercury, foxglove, and some other poisons, it may remain in the body for a considerable period inactive, and at length begin to operate suddenly ;" and he further remarks in that work, " that Dr. Jahn attributes iodism to iodine being slowly accumulated in the body, and that he (Dr. Jahn) contrasts iodism with mercurialism." It may indeed be still undetermined whether iodism, in its characteristic form, be the result of the accumulation of iodine in the system, but the earlier effects, such as coryza and ptyalism, can scarcely be considered so, as they occur generally so soon after the commencement of its use, sometimes shortly after the first dose has been taken. The case that Dr. Nelligan furnished me with, already mentioned, seems to have been an exception, as the effects did not indicate themselves until the commencement of the third day.

What further remarks I have to make I shall intersperse through the following cases ; I shall merely preface for the present, that the salt that was used appeared to be very pure, being in four-sided prisms, and slightly, if at all, deliquescent.

Chronic Abscess and Disease of the Joints.

The first case that I shall give was one of chronic abscess, it was that of Anne White, æt. 29, of fair complexion, who was

registered a patient at the Dispensary, November the 16th, 1840. When she applied for relief there existed a chronic abscess of considerable size, a hand's breadth, above the right knee ; the joint was much swollen, and there was a large indolent ulcer on the leg of the same side. There was also some tumefaction in the left knee ; any attempt at walking occasioned her pain ; she was affected with heavy perspirations at night ; her pulse was quick, and she was considerably emaciated. She had been so affected for six months previously, and had undergone much treatment for the cure of her complaints, but with no avail. In the list of remedies ordered for her, were included local bleeding by leeches, and blistering over the abscess. Before prescribing the iodide of potassium for her, I tried other remedies, but unsuccessfully. I finally ordered the following mixture :

℞ Decoct. Guaiaci, ℥ viii.
Potassii Iodidi, gr. xxiv.
Tinct. Cardam. Comp., ℥ ss.
Tinct. Hyosciam. ʒi.
An ounce of this mixture to be taken three times a day.

An ointment consisting of equal parts of mercurial and iodine ointments was applied over the abscess. The ulcer on the leg was dressed with lint moistened in black wash, and covered over with oiled silk. In three weeks from the commencement of this treatment, the abscess had entirely disappeared, and in two months her health was completely restored, the ulcer being healed, and the tumefaction in the knees having subsided. She continued the above mixture during the entire period of convalescence. The black wash, after the ulcer had been dressed with it for some weeks, was replaced by the liquor plumbi subacetatis ; coryza and slight ptyalism were induced shortly after she commenced taking the mixture. The doses were accordingly diminished until these effects wore off.

Six weeks after she was cured, the leg commenced ulcerating again, and the knee of the same side became slightly swollen

Having been again submitted to the same treatment, she recovered completely. I learned from herself a few weeks ago, that she has had excellent health ever since.

The tincture of hyosciamus was added to the mixture, as it has a tendency to prevent the iodide of potassium producing too great an irritation of the system.

In the following case of disease of the hip joint, the iodide of potassium proved highly serviceable. Richard Heavy, æt. 6, registered January 14th, 1842, apparently of scrofulous habit. This child, after an attack of severe pneumonia, which I was obliged to treat with mercury, local depletion, and blistering, was seized with a pain in the right hip joint, which produced lameness. This pain was increased by pressure in the groin, or in the back of the joint, it was also much aggravated by rotation of the femur with pressure upwards. The boy likewise complained of a pain in the knee in the same side; he was affected with night sweats, loss of appetite, and quickness of pulse. There was apparently wasting of the muscles at the back of the joint, but at that period no real shortening of the limb. I treated the disease at first by the successive application of a few small blisters over the affected part, but afterwards made one be kept open by savine cerate, and as the child was much exhausted by his previous sickness, I prescribed some medicine of a tonic character. On finding that this treatment did not afford him much relief, I ordered him the following mixture:

Decoct. Cinch. ℥ vss.
Potassii Iodidi, ʒ ss.
Tinct. Gentian. Comp. ℥ ss.
Tinct. Hyosciam. ʒ i.

Two teaspoonfuls of this mixture to be taken three times a day. The blister still to be kept open with the savine cerate. The day subsequent to that on which this mixture was first used, marked relief was experienced, the pain which attended the movements of the limb being considerably abated. The mixture was continued for about three weeks, when as the child was so

much better, I discontinued to visit him. On inquiry a few days ago, I was informed by his mother that he has since enjoyed good health, and that he has had no return of the pain in the joint, unless when he over-exerted himself in walking or running. The leg of the side which had been affected was somewhat shorter than the other, and there was true anchylosis of the joint. In this case I did not notice any peculiar physiological effects to arise from the use of the iodine.

In both the preceding cases it will be observed, that the fever was of the hectic and not inflammatory character.

From the occasional advantage arising from the use of the iodide of potassium in diseases of the joints, it might be concluded, that it would prove a useful remedy in caries of the vertebræ. The irritability of the stomach and dyspeptic symptoms, which so often attend that complaint, however militate against its use in it.

Ophthalmia.

I have frequently ordered the iodide of potassium with great benefit in scrofulous ophthalmia, but being so well known as a remedy for that disease, and as it deservedly stands so high in the estimation of practitioners in the list of medicines used for it, I shall abstain from giving any cases of cures effected by its use, but shall merely confine myself to the two following cases illustrating its effects in catarrhal ophthalmia.

Richard Delmar, registered a patient of the dispensary, December 15th, 1841, æt. 32. This man during the course of last year was twice under my care for severe catarrhal ophthalmia, to which he is very subject, as he resides in a low, damp cellar. On his first application to me there was intense redness of the conjunctiva of both eyes, with chemosis and muco-purulent discharge. He also was affected with the symptoms of common catarrh, accompanied by general febrile excitement. Before applying at the dispensary he had been salivated, but I understand from him, with aggravation of the symptoms, probably owing to his being exposed to much cold and wet while taking mercury.

When I visited him I applied a strong solution of nitrate* of silver over both eyes with a camel's hair pencil, a practice that has been much recommended by Dr. M'Kenzie, on the authority of Beer, which I continued to do for some days. I also ordered an astringent collyrium, consisting of 12 grains of sulphate of zinc, and 2 drachms of vinum opii to 6 ounces of distilled water, to be dropped into his eye three times a day. By this treatment, combined with blistering, he was completely cured in about three weeks. He returned to me some months after this, with his left eye affected, the inflammation being of the same character as before, and accompanied with the same constitutional symptoms. This time having tried unsuccessfully the local treatment already described, I had recourse to the iodide of potassium, but with no advantage to the patient; finally, as I was unwilling to subject him to another course of mercury on my own responsibility, the patient's constitution not being of the strongest, I brought Dr. Hamilton with me to see him, who agreed with me that it would be judicious to salivate him again to prevent destruction of vision, and when the febrile symptoms had subsided, to give him bark. By the use of these remedies, aided by the local treatment already mentioned, he shortly recovered.

At the period he finally applied to me, which corresponded with the date that heads this case, his right eye was similarly affected as his left one at his previous application; but though the inflammation of the eye was very intense, there was no attending fever. There was dryness of the mucous membrane of the nares, and he complained of that sensation of fulness and stuffing of the head which is so common in cases of catarrh. He was also affected with supra-orbital pains.

Having first confined myself to the local treatment prescribed on the two former occasions, but finding it not to suffice, I or-

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* The strength of the solution recommended by Dr. M'Kenzie is 4 grs. to the ounce of distilled water; what I applied was much stronger.

dered him the following mixture, his pulse being weak and skin cool.

Decoct. Cinch. ℥ viii.
Iodidi Potassii, ʒ ss.
Tinct. Cardam. ℥ ss.
Tinct. Hyosciam. ʒ i.

An ounce of this mixture to be taken every third hour.

The local treatment, consisting in the application of the solution of nitrate of silver over the eye, the astringent collyrium, and blistering behind the right ear, was continued. He was affected with slight coryza and ptyalism on the day on which he commenced the use of the iodide of potassium, and from that period his eye began rapidly to improve.

The following question will naturally suggest itself.—Why did the iodide of potassium produce so much benefit on the last occasion, and not when it was used previously? I think that the success which attended the remedy was owing to the absence of febrile excitement, whenever it is used where inflammatory fever exists, it generally appears to me to aggravate the symptoms.

The case already alluded to, furnished to me by Dr. Battersby, also illustrates the use of the iodide of potassium in ophthalmia, it is as follows: Mr. E. C., a young gentleman, aged 20 years. Since removing from the country two years ago, has passed almost uninterruptedly eight hours daily in a confined office; naturally of a delicate constitution; his health of late seemed to decline; he had frequent short dry cough; constipated bowels, while at the same time his temper became unusally irritable.

On the 27th of January he was seized with a smart, feverish attack, ushered in by a severe rigor and diarrhœa. From this he was convalescent. In three days afterwards, an herpetic eruption made its appearance on the lips; the left eye then presented the usual appearance of acute catarrhal ophthalmia, which was treated by the application of leeches, fomentations,

and poultices, and subsequently, by blistering behind the ear. The acute symptoms having subsided on the 3rd of February, the state of the eye was the following. The lids were slightly œdematous, their lining membrane highly vascular and roughened; the bright redness of the conjunctiva was changed to a dusky hue, its vessels were large and tortuous, some of which passed over the edge of the cornea towards a slight opacity on its lower half, which had remained after an old attack of ophthalmia; the surface of the cornea seemed rough, but in other respects natural; the sclerotic was yellowish; the iris was unaffected.

There was no headach or pain in the eye, but the separation of the lids was attended with an uneasy, grating feel and copious flow of tears, with intolerance of light. The tongue was clean, skin cool, no attending fever.

To small doses of calomel and James' powder, which he had been using, was now added Sulph. Quin.

℞. P. Jacobi,
Sulph. Quinæ āā gr. viii.
Submur. Hydrarg. gr. ii.
In pilulas quatuor; i. ter die.
℞. Extract. Belladonnæ,
Unguent. Hydrarg. āā ʒii.

Feb. 5th. There is a superficial ulceration of the lower part of the cornea; the iris is dilatable and natural, yet seems unaffected by the belladonna. There is no pain or uneasiness, except that arising from the feeling of roughness in front of the eye. The skin of the temple and eyebrow is very sensitive to the touch. Ordered to sit up.

℞. Aquæ distillatæ, ʒi.
Argenti Nitrat. gr. iv.

Fiat solutio. The ulcer on the cornea to be touched with the wash by means of a camel's hair brush.

6th. The application of the nitrate of silver caused severe

pain on the instant, but was followed by relief; the vascularity of the eye remains the same; extremities cold on going to bed; the gums are tender, whitish, with breath fœtid, but no salivation.

Omitte Submuriat. Hydrarg.

7th. The vessels of the conjunctiva appear less distended; the eye felt easier after the application of the nitrate of silver, which is succeeded by a feeling of itchiness; the eyebrow is studded with very minute vesicles.

8th. Very little improvement.

℞. Decoct. Cinchonæ, ℥vii.
Tinct. Cinchonæ, ℥ss.
Iodidi Potassii, ʒss.
Syrup. Zingiber. ℥ss.
M. ℥i. bis die.
℞. Vini Opii,
Aquæ distillat. āā ʒi. M.

Two drops to be introduced twice a day between the eyelids, and the ulcer still to be touched with the Solut. Argent. Nitratis.

9th. Having taken the first dose of the mixture last night between 9 and 10 o'clock, he awoke at 3 A. M. in a state of great uneasiness, with a very bad taste on his mouth, soreness of the jaws, and a copious salivation. These symptoms still continue, there is considerable tenderness corresponding to the situation of the parotids; the left appearing slightly swollen; the mucous membrane of the mouth and fauces is red; the jaws swelled; and the appearance of the nose and lips resembles exactly that of one affected with coryza from cold; great depression of spirits.

10th. The salivation and soreness of the mouth have ceased; there continues slight tenderness of the parotids; the eye already is better, and his looks and spirits are very much im-

proved; the mixture, which was omitted yesterday, to be continued this day, with

Tinct. Opii Camph. gtt. x. ad unciam misturæ.

11th. The vascularity of the eye is less; the edges of the ulcer are less abrupt; vision is clearing; appetite increased.

16th. A rapid improvement has since continued; the medicine agreeing perfectly, without appearing to affect any of the secretions. There is no appearance of ulceration of the cornea, but merely a smooth depression in its place, a few red vessels still surround its periphery, but they daily diminish in number and size; allowed to take the air.

March 1st. Has been for some time in the country, where he soon regained his accustomed health; the state of the eye is quite as good as before.

In this case, which was so very appropriate for the use of iodine, it will be observed that it was the only medicine which afforded effectual relief, that the local remedies proved of no avail until it was ordered, and that the salivation, coryza, and soreness of the gums, occurred immediately after it was commenced. In general the action of the iodide of potassium is not so intense as it proved to be here, when given in such moderate doses. Often the patient is not aware that its specific action has been induced, until his attention is drawn to it, by being asked if he had symptoms similar to a cold in the head? to which he replies that he has had what he supposed to be a slight cold, since he commenced the use of his medicine. The unpleasant taste on the mouth, mentioned in this case, patients often complain of, who are affected with iodic salivation. I have not noticed fœtor of the breath, but I have frequently observed loosening of the teeth.

USE OF IODIDE OF POTASSIUM IN SYPHILIS.

Amongst the cases of syphilis, for which writers admit that the iodide of potassium proves most beneficial, are included nodes and syphilitic affections of the bones, and those forms which

have been denominated by some, pseudo-syphilis, more correctly styled anormal in the article on Mr. Aston Key's Report on Primary Syphilis, in the British and Foreign Medical Journal. The passage I refer to is as follows:* "This medicine (mercury) and iodine have both their respective benefits, and it may be said, that iodine fulfils that in which mercury is deficient. In the normal forms of syphilis, the latter is rarely found to disappoint, and in the anormal forms of primary sore, it rarely fails to do harm, while iodine exerts comparatively little influence on the normal chancre, chiefly confining its good services to the sores that are set astray by some peculiarity of the constitution." What is here judiciously observed of primary syphilis is still more applicable to the normal and anormal cases of secondary syphilis, and not only to those cases which are anormal from peculiarity of constitution, but to those which are deprived of their normal character by the abuse of mercury. I shall give three cases which I think will illustrate the use of iodine, both in primary and secondary syphilis, but before I do so, I shall add a few words with regard to its curative influence over that disease. In those cases which I considered genuine instances of the disease, in which I ordered it, I have found a disposition to relapse. At the same time it must be admitted, that if "the symptoms of the disease occasionally disappear without the use of mercury," which even Dr. Colles allows,† who is very much of the Hunterian School, whose words I have quoted, it is very likely that iodine being a medicine, to use a figurative expression, which has such influence in keeping the disease at bay, must operate very strongly, if not directly, at all events in an indirect manner in effecting a cure, and more particularly in some scrofulous constitutions, where mercury sometimes proves deleterious.

The first of the three cases that I shall give is that of Catherine Conlan, æt. 45, registered April 21st, 1841. I was in-

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* Page 340, No. xxiv. † Page 306 of his work.

formed by the patient that she had been treated two years before the date of registry with mercury for a secondary syphilitic affection of the skin and throat, which she contracted from her husband; and that while she was undergoing the treatment she was exposed to much cold and hardship, and that so far from being improved by it, she found herself considerably worse. She therefore applied at one of the hospitals of this city, where she was admitted. While there, she says she became much better; but having left it prematurely, all the symptoms of the disease returned in an aggravated form. She was subsequently admitted into another hospital, which she also left without being cured. Despairing then of deriving any relief from medicine, she made no further application to any institution until she was persuaded by some person to obtain a subscriber's ticket to be visited from St. Mary's Dispensary.

When I visited her, there was a large ulcer on the crown of her head, beneath which the bones were in a state of caries. A tubercular eruption existed on her forehead, and there were large ulcers on her legs and various parts of her body. She suffered severely from pains in her bones; was extremely emaciated and crippled, her legs being constantly flexed. She was affected with nocturnal perspirations. For the last six months she was almost always confined to her bed. Having first prescribed a mild purgative which freed her bowels, I ordered the following very incompatible, but according to my experience, very efficacious mixture:

Decoct. Guaiaci, ℥ viij.
Potassii Iodid. ʒ ss.
Tinct. Guaiaci, ℥ ss.
Tinct. Hyosciami, ʒ i.
M. ℥ i. ter die sumend.

The dilute citrine ointment to be applied to the eruption on the forehead. Having continued to take this mixture for about six weeks, she was able to resume her usual occupation. She gradually recovered her strength; the eruption disappeared;

the bones that were in a state of caries separated, and the ulcers all healed. In this ptyalism and coryza were produced by the earliest use of the medicine.

When the medicine was discontinued for any length of time the ulcers and the pains in the bones, which gave her no annoyance while she was taking it, returned; but the symptoms always yielded when the medicine was renewed.

The next case is that of a young gentleman, æt. 23, who contracted primary syphilis during the month of January, 1840; for the cure of which he underwent a course of mercury, which he took very injudiciously, having made no change in his usual mode of life, and being much exposed to wet and cold while using it. The ulcer healed under the treatment, but his health began to decline. He lost his appetite; became restless at night, and rapidly fell away in flesh. His father, being very much alarmed about him, wrote, requesting me to go out to the country to see him. When I visited him, February 14th, 1840, I found him greatly emaciated, his pulse very quick, and on examination I observed in the situation of the original chancre, an indurated lump which was beginning to ulcerate again. He was, as he expressed it himself, bathed in perspirations at night. I ordered him to drink six ounces of the decoction of sarsaparilla three times a day, and an ounce of the following mixture every third hour:

Aquæ puræ, ℥ viij.
Tinct. Gentian. Comp. ℥ i.
Iodidi Potassii, gr. xx.
Tinct. Hyosciam. ʒ i.

Having considerably recovered his strength by this treatment, as the ulcer continued slowly but steadily to increase, I put him on mercury again, and gradually brought him under the influence of it. I kept him in a state of mild ptyalism for about three weeks, as his health did not suffer from it. The ulcer being then completely healed, and no hardness remaining, I discon-

tinued my visits. When leaving him, I strongly recommended him not to expose himself to cold.

About a month after this, I was again sent for to see him. I then found him suffering from an attack of rheumatism, I suppose brought on by some exposure to cold so soon after the use of mercury. His knee was very much swollen, and red; he complained of great pain and tenderness in it, which was much increased at night; he also was affected with general pains throughout the body, and suffered from slight febrile excitement.

I ordered his knee to be leeched and fomented, and prescribed five grains of Plummer's pill to be taken at night, and also a purgative draught in the morning, with twenty drops of wine of the seeds of colchicum in it. By these means the knee was much relieved, though it still continued swelled and painful. The Plummer's pill at night and purgative draught in the morning having been repeated, the febrile symptoms considerably abated. A blister was applied to his knee, and he commenced taking the iodide of potassium, combined with the decoction, and tinct. of guaiacum, in the quantities mentioned in the last case. He now rapidly improved, and in a few weeks was completely free from all symptoms of rheumatism. When the blister was healed his knee was strapped with strong adhesive plaster.

This gentleman has since been in the enjoyment of excellent health.

The iodide of potassium, at both periods that it was used, produced its specific action very early.

The last case which I shall give of its use in this disease is as follows: John M'Haffy, a type-setter, applied at St. Mary's Dispensary, with a primary sore on the glans penis, December 5th, 1841. When I saw this patient, I recommended him to endeavour to be admitted into some hospital, or if not, to give up work and confine himself to the house, and not to expose himself to cold while taking remedies for the complaint. He

would not, however, take my advice; but applied to some practitioner who was more reckless than I was in the administration of mercury; who, by ordering that medicine for him, cured indeed the ulcer, but otherwise rendered his condition most deplorable. He returned to me about six or eight weeks afterwards with his gums sore and face swollen, greatly emaciated, with a large indurated swelling in his left groin, his legs anasarcous, and suffering from a severe cough, and general pains in his bones. I again recommended him to endeavour to be admitted into hospital, but he would not do so; however, he promised to obey any directions which I should give him.

To relieve this complicated case, having previously ordered a mild purgative containing a little tincture of jalap, I prescribed the following mixture:

℞. Mist. Camph. ℥ viij.
Tinct. Scillæ,
Spirit. Nitrosi Ætheris, āā ʒ iss.
Carb. Ammoniæ, ʒ ss.
Syrup. Balsami Tolutani, ℥ ss.
M. ℥ i. omni tertiâ horâ.

A blister was applied to his chest. As the man was very much debilitated, I ordered the stimulating diuretics and expectorants just mentioned, by which the bronchitis he suffered from was greatly relieved. I then prescribed three grains of the iodide of potassium, to be taken in an ounce of decoction of bark three times a day, for which I afterwards substituted the mixture of it with guaiacum, as mentioned in the last two cases. Small blisters were applied successively over the swelling in the groin. By these remedies he was quickly relieved. The pains abated. Though hitherto restless, he now began to enjoy sleep at night. The anasarca subsided in his legs, and the swelling in his groin. He resumed his work, having greatly recovered his strength. I subsequently lost sight of him, and consequently do not know if he has had any relapse.

Those cases of syphilis which I have given chiefly illustrate

the use of iodine in repairing inroads made on the constitution by the injudicious use of mercury. Though most physicians must have observed in their daily practice the great benefit arising from the use of iodine in similar cases, I thought that the perusal of mine might still prove not uninteresting, and have therefore published them; they may, at all events, deter such as are careless in the use of mercury from being so, should they chance to read this paper. Even in the best managed courses of mercury, some untoward symptoms will at times indicate themselves; it is consolatory, therefore, that we have such a remedy as iodine to have recourse to.

Rheumatism.

On the use of iodide of potassium in chronic rheumatism, I shall not dwell, as its merits in that complaint are generally acknowledged. With regard to its management in the acute forms of rheumatism, the advice comprised in the following extract from the British and Foreign Medical Review, appears to be excellent. Not having Mr. Macleod's original work before me, I quote again from that Journal, p. 460, No. XXVI.: "Iodide of potassium receives its due meed of praise for its virtues in relieving pain, and otherwise greatly benefiting cases in which the acuteness of the attack has been subdued. He (Mr. Macleod) thinks doses of two grains three times a day secure, in the majority of cases, all the beneficial effects of the remedy." By not following this rule of waiting until the acuteness of the attack had subsided, or at least until the attending fever was subdued, I have known all the symptoms of the complaint to have been severely aggravated. Indeed the sufferings of a gentleman advanced in life, whom I have at present under my care, with rheumatic fever, were so much increased by the use of it, that he would not see the gentleman who was in attendance on him any more, and was most angry with me, whom he sent for, if I attempted saying anything in his favour. He assured me that his thirst was increased, that his tongue became parched, his

skin hotter, and the pains in his limbs and joints much more intense by the use of it.

The plan I pursue in the practice of the Dispensary, which I find to be very efficacious, is to give smart doses each night of the compound calomel pill, or of pure calomel, and to follow it up each morning with twenty drops of wine of the seeds of colchicum in a purgative draught of infus. of senna, tinct. of rhubarb, and the sulphate and carbonate of magnesia. I also order the following mixture to produce diaphoresis, provided the stomach bear it:

Mist. Camph. ℥ vi.
Carb. Ammoniæ, ʒ i.
Vini Ipecacuanhæ, ʒ ij.

M. ℥ i. c. ℥ ss. Succi Limonis, in effervescentiâ sumend. omni tertiâ horâ.

When the fever is subdued by these means, I prescribe the iodide of potassium in some of the forms already mentioned. I have notes of many cases in which I found this treatment to be successful in acute rheumatism; but as this paper is already too long, I shall not subjoin them.

The chief virtue of iodide of potassium in relieving inflammations of the fibrous membranes seems to be confined to the specific forms, gout and rheumatism, and not to simple inflammation of those membranes.

In the following case the iodine failed to afford any relief, I think owing to the inflammation being of a simple character. I however publish it, as it seems to be instructive.

John Kehoe, æt. 45, registered ———, 1841. When I visited this patient, I was informed by him that he had been suffering during the previous fortnight from a sloughing ulcer on the dorsum of his foot, which had succeeded an attack of neglected erysipelas. This ulcer, when I first saw him, was attended with sympathetic fever. Having succeeded in curing these ailments in about twelve days, I discontinued my visits; but was again sent for to see him, as he had been seized with intense shooting pains, over the back of his head, and extending

down the neck. It was not ushered in by rigors, and there was but slight attending fever. Supposing this attack to be rheumatic, I treated it as such, and ordered him the iodide of potassium, but without rendering him any relief; though it affected his gums and the mucous membrane of the mouth and nares. I subsequently made a blister be applied to the back of his head. On the failure of these remedies, as the pain still continued, rendering his nights restless, I prescribed five grains of blue pill for him three times a day, which he took until his gums were affected. As he was debilitated from his previous illness, I did not consider it judicious to have recourse to local bleeding. The pain being now considerably abated, I did not subject him to any further treatment, in the hope that it would wear off by time. Meanwhile a large abscess formed behind the right ear. Having brought Dr. Battersby with me to see it, I opened it by a free incision, which gave exit to much matter. On passing a probe into the cavity of the abscess, the bone beneath was found to be extensively bared. An opening formed spontaneously into the external ear, some days after it was lanced, through which the discharge flowed. The case in other respects went on well, the part healed up without any exfoliation of bone, and he has since had good health.

I have here, in conformity with the divisions of inflammations of the fibrous membranes made by the reviewer, and contrary to the opinions attributed by him to M. Bouillaud and Dr. Macleod, considered this as an instance of the simple form of inflammation of that class of membranes, and am inclined to think, that the failure of the iodide of potassium in producing benefit was because the inflammation was not of the rheumatic or specific character.

Lumbago.

The readers of this Journal are aware that Dr. Graves has strongly recommended the use of the iodide of potassium in lumbago, for which I have found it an excellent remedy. There is one form, however, of rheumatism of the muscles of the back

and loins, in which it should be used with caution, it is that which is attended with dyspeptic symptoms, such as flatulency, diarrhœa, and irritability of the stomach; these symptoms, in my opinion, should be first relieved before having recourse to iodine. In sciatica I have also found that remedy useful.

Gout.

The last case that I shall give is one illustrative of its use in gout, of which the following is a brief outline.

Mr. A., a gentleman of robust frame, but not very plethoric habit, æt. 46, whom I attended in the autumn of the year 1839, informed me that he became liable to periodic attacks of gout two years before he was under my care, with which he had been regularly seized each spring and autumn. When I visited him he was affected with severe gouty imflammation of the right foot, which had commenced in the great toe and extended over the dorsum of the foot. The pain was intense, being of a burning character, and the part was very sensitive to the touch, hot and deeply red. His pulse was quick, tongue loaded, urine deeply coloured, depositing copious lateritious sediments, bowels constipated and difficult to move. I ordered him, for a few nights, six grains of calomel to be followed by the following purgative draught each morning containing colchicum.

Infus. Sennæ, ℥ iss.
Tinct. Rhæi, ℥ ss.
Vini Seminum Colchici, gtt. xx.
Sulph. Magnesiæ, ℥ i.
Carb. Magnesiæ, gr. x.

The fever quickly gave way to this treatment, and the urine ceased to deposit lateritious sediments. The pain still continuing in the foot with much œdema, I ordered him the iodide of potassium in two-grain doses, combined with the guaiacum in the manner I have stated, by which he was totally freed from all gouty symptoms in some days. About a month afterwards having walked a considerable distance, he had slight relapse,

from which he quickly recovered on the treatment being renewed. Though it is now two years and a half since he was cured, he has no further return of the complaint.

After all his former attacks, chronic pains remained in his feet, rendering him but an indifferent walker, as these pains completely ceased after the use of the iodide of potassium, and as he had no return of the disease since, though he made no alteration in his mode of life, it would appear that on former occasions the disease was not entirely subdued but lingered in a chronic form, ready to be called into activity by exciting causes.

I shall now bring this paper to a close, which is already too much extended. I have notes of many more cases that might prove interesting, which perhaps I may publish on some future occasion, when I have obtained further experience; those which I have furnished I should have wished to have given with greater minuteness of detail, but was prevented doing so from reasons already assigned, and a desire to be as brief as possible. I have given but one instance in which the diuretic action of iodine was displayed. Dr. Stokes,* it is well known, recommends it as a diuretic for pleuritic effusions and dropsies, and mentions it as one on which he places the greatest reliance; he advises the same rule to be preserved with regard to it, as with respect to other diuretics, which is to wait *until all inflammatory symptoms have subsided.*† Iodine appears from what he says to be chiefly of use at the precise point where mercury begins to fail, which is when the disease has changed from its acute to its chronic form. In this respect (i. e. the one supplying the deficiency of the other) the effects of these remedies in effusion is somewhat analogous to their effects in syphilis. Dr. Stokes adds that the effect of the internal and external use of iodine "in promoting absorption is sometimes singularly rapid." Some of my friends who have used it according to his advice, among them Dr. Shan-

* Page 519 of his work.

† He orders a pint of Lugol's mineral water to be taken during the day, and ℥ij. to ℥ss. of iodine ointment to be rubbed daily over the side.

non, Surgeon to the South Union Workhouse, have assured me that its diuretic action commenced after the first dose. I have had as yet no experience in the use of iodine in the very minute doses in which antimony and mercury are sometimes used. The latter medicine has been recommended to be so used by Dr. Colles in his work, in peculiar syphilitic cases, and Dr. Law has published an interesting paper on the same subject in this Journal. I cannot answer for the correctness of the views in this paper, but I pledge myself for the faithfulness of the cases. I have now only to express my thanks to Dr. Battersby, Dr. Nelligan, Dr. Wilde, and Dr. Shannon, for the information and cases with which they furnished me.

ART. XV.—*Observations on Diagnosis of Aneurism of the Aorta.*

By ROBERT LAW, M. B., A. M., M. R. I. A., Professor of the Institutes of Medicine in the School of Physic in Ireland; Physician in ordinary to Sir Patrick Dun's Hospital, &c. &c.

THE signs of a disease are the lineaments and features which serve to distinguish and to identify it. These signs are valuable according as they are exclusive and peculiar, according as they belong to that disease, and to no other. When signs have this special, exclusive character, they become pathognomonic of the disease of which they are the expression.

Aneurism of the aorta has ever been regarded as one of the most obscure diseases within the range of medicine, in consequence of the admitted absence of any pathognomonic sign, until its existence is announced by a tumour capable of being either seen or felt. And, as the disease is far from always tending to exhibit itself in the form of an external tumour, but, as it as often remains buried either in the chest or in the abdomen, equally pursuing its course to a fatal termination, it becomes the duty of the physician to endeavour to attach to its existence, when in this obscure state, as great a degree of probability, if not of certainty, as it is capable of. Although pathologists aver, that the disease

has no peculiar, special symptoms, yet we are disposed to believe that a closer examination of the symptoms ordinarily regarded as equivocal, will lead to the discovery of differences in them, unheeded by superficial observation. Not only should the aggregate of the symptoms accompanying the disease be closely investigated, but each individual symptom should be subjected to a rigid scrutiny, and we doubt not that the result of such examination will be, to procure for this disease an unexpected measure of certainty of diagnosis.

We are sure still, that it ever will be the case, that instances of aneurism will occur with no symptom to mark their existence, and whose first announcement will be their fatal termination. Nor can we be surprised at this, when we consider that while the lesions of other organs or apparatuses announce themselves by the derangement of the functions of the organs thus affected, an inconceivable amount of organic lesion in the circulatory apparatus will consist with the most perfect regularity of its physiological function. An Aneurism of immense dimensions will be situated in the immediate vicinity of the heart, and not occasion the slightest disturbance of its normal action. Nor will its size necessarily be attended with any pain or uneasiness in the tumour itself, to lead to its discovery; on the contrary, our observations will tend to prove, that not unfrequently the larger the aneurism is, the more free from pain is it, and that the pain becomes a valuable diagnostic sign, under circumstances where the unyielding nature of the parts in the midst of which the aneurism is placed, does not allow it to enlarge into dimensions capable of being felt. Although we would not attempt to establish any ratio between the size of the aneurism and the degree of pain that generally attends it, yet we have observed that very often they were in an inverse proportion. In one of the cases which we shall presently detail, and to the detection of which we were principally led by the pain, the absence of an appreciable tumour was urged as a reason, by an eminent surgeon who saw the case often in consultation with us, to refuse his consent to its

being an aneurism. The aneurism being connected with the posterior part of the abdominal aorta opposite the cæliac axis, where it was bound down to the spine, was not free to project forwards, and so could not be felt in the epigastrium.

We feel quite satisfied that a proper attention to symptoms will greatly diminish the number of these instances, and that the diagnosis of the disease will be as little a matter of conjecture or guess as most internal diseases. Aneurism, when not exhibiting itself externally in the form of a tumour, may discover itself in the derangement that it produces in the functions of the organs with which, in its development, it becomes connected; the mere mechanical pressure that it exercises upon important organs, produces in these organs disturbance more or less cognizable. The less the organs submitted to this pressure are able to endure it, the more marked are the symptoms to which such pressure gives rise. Comparatively little light is thrown on aneurism situated in the abdomen from this source; the organs in this region bear pressure more easily, and are more free to escape from such pressure.

It is in the thorax especially that an aneurism, pressing upon important organs, gives rise to symptoms which often lead to its discovery. This pressure may be exercised upon the organs of respiration, circulation, or deglutition, so as to interfere with their respective functions. The respiratory functions may be disturbed by the aneurismal tumour pressing directly upon the trachea, in which case there will be a peculiar stridulous respiration, and a feebleness of the respiratory murmur in both lungs, and that in proportion to the degree in which the trachea is narrowed by such pressure. If instead of exercising a direct pressure on the trachea, the tumour press it obliquely, according as it press more on the left or right side, the respiration will be more feeble in the lung corresponding to the side of the trachea most pressed upon.*

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* At a meeting of the Pathological Society Mr. R. Smith exhibited a very interesting specimen of aneurism which pressed upon the trachea, and perforated its

Where the pressure is exerted upon a bronchus it produces in general a sonorous râle in it, and a feebleness of respiration in the lung according to the degree of pressure. An old man came under our care for an oppression of his chest and dyspnœa. He was so deaf that it was a vain thing to try to obtain from him any history of his illness, as to duration, &c.; the only stethoscopic sign was an unusually loud sonorous râle in the left subclavicular region exactly resembling the bass note of a violincello. It conveyed to us the impression of a bronchitis confined to a single tube. The râle was so loud as almost to mask every other sound in the side in which it was heard. The respiration was very distinct in the opposite side, but did not strike us as being unusually so. The patient having continued under our care for some time, and there being no change in his symptoms, we suspected that it must be something more than a mere circumscribed bronchitis, and instituted a more careful examination, when, in addition to the râle (which had never undergone any change of character from the time of our first hearing it), we observed an extreme feebleness of respiration under the left clavicle, while there was no dulness on percussion in this region to account for it. We now compared the respiration in the two sides, and discovered a palpable difference of distinctness in that of the right. We were immediately reminded of Doctor Stokes's valuable observation on this difference as a diagnostic mark of aneurism, and set ourselves to look for it, when we discovered a distinct pulsating tumour in the back, situated between the posterior margin of the left scapula and the spine. Its heaving pulsation corresponded to the radial pulse. There was no difference between the pulse at the wrists. We diagnosed it as an aneurism of the descending aorta, from the position assumed by the tumour, and from the

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anterior wall; it caused a partial adhesion between the anterior and posterior walls of the trachea, in such a way as to divide the tube, leaving a narrow channel at each side of the adhesion.

harmony of the pulse at each wrist. We were prevented seeing the issue of the case by the patient leaving the hospital; we learned, however, that he died about a fortnight after leaving, having previously thrown up a large quantity of blood; but we could not learn from his friends whether he had vomited it or expectorated it; whether in fact the fatal hæmorrhage took place into the œsophagus or into the bronchus. As, however, he never complained of any difficulty of deglutition, and we had such evidence of pressure on the bronchus, we can have but little difficulty in deciding on the latter having been the passage into which the tumour burst.

We deem it right to remark, that since we met the preceding case, another came in our way resembling it in many of its features, viz., the loud sonorous râle, apparently confined to one bronchial tube, and palpable feebleness of respiration in the corresponding lung in comparison with that of the opposite one. We looked for the same cause to account for the similar phenomena, but could not discover it. The ordinary treatment of bronchitis removed these phenomena. We thus see that pressure on the bronchus, or congestion of its lining membrane and consequent narrowing of its tube, will produce similar effects, whose cause demands ulterior and careful examination. A preparation in our museum exhibits to us an aneurism somewhat larger than a pigeon's egg, pressing equally on the left bronchus and upon the œsophagus, whose existence was not suspected during life. The patient in whom it was found was admitted into hospital affected with typhoid pneumonia in its third stage, engaging the whole of the left lung. There was complete dulness on percussion through the entire side. This was quite enough to account for any feebleness of respiration that the pressure on the bronchus would have produced. He made no complaint of difficult deglutition. The condition of the patient, when admitted, was entirely hopeless; he had been a man of most intemperate habits, and was affected with a diarrhœa that no medicine could control.

An aneurism may press upon any portion of the parenchyma

of the lung, and produce in its structure a change somewhat resembling the effect of pressure of fluid, as in case of pleuritic effusion; in which case the dyspnœa or oppression will be in proportion to the degree of pressure exercised on the organ; or it will happen that the tumour may so project into the chest and encroach on its limits, as not to leave the organ room to expand itself to receive a due quantity of air. This was the effect produced in the case of Pigott, which we shall presently detail. The character of the respiration was as if the air entered a thin stratum of pulmonary tissue. It was easy to distinguish between the feebleness of respiration in this case, resulting from the inability of the pulmonary structure to open itself to admit the air, and that the effect of pressure on a bronchus.

Corvisart comprises in the following observation the different positions in which pressure from an aneurismal tumour, acting upon different portions of the respiratory apparatus, produces embarrassment in the respiration: "L'effet principal de ces tumeurs, celui qu'on retrouve dans tous les cas c'est la gêne de la respiration suite inevitable de la compression permanente tantôt de la trachèe, tantôt de la bifurcation des premieres divisions des bronches, ou des poumous eux memes."

Besides this habitual dyspnœa, the effect of a permanent cause, individuals affected with throracic aneurism are subject to occasional dyspnœa quite independent of the size of the aneurism, but apparently connected with and dependant on its nervous relations. We know of one case in which the dyspnœa assumed all the characters of spasmodic asthma. The disease appeared under such a complete disguise that it was not suspected during life. Antispasmodics afford much more relief in these paroxysms than bleeding does. These paroxysms often prove fatal before the tumour has attained to any considerable size. This is proved by the following case of aneurism of the ascending and arch of aorta, pressing upon the trachea, attended by paroxysms of dyspnœa, in one of which death occurred.

Matthew Jones, aged 30, coal porter, admitted under my are into Sir Patrick Dun's Hospital, September 28, 1838.

Twelve months ago first began to feel his chest loaded with mucus, at which time also he experienced some difficulty in swallowing. Now, too, he became subject to palpitation on the least exertion. He exhibited the following phenomena on admission. Breathing so much oppressed as to prevent his lying down. Each inspiration attended by a hoarse, rough stridor. The voice has a peculiar deep hoarseness, like ventriloquism. Has a distressing and constant cough with copious mucous expectoration. Has considerable difficulty in swallowing, which he refers to behind the top of the sternum. The top of the sternum and the sterno-clavicular articulation of the right side project unusually. There is a remarkable fulness of the veins of the right side of the neck, of the chest, and of the right arm. Percussion yields a dull sound in the right subclavicular region and in upper third of the sternum. The stethoscope applied here discovers a distinct double pulsation attended with impulse, which impulse is lost according as the instrument is moved towards the heart. The pulse at right wrist is much weaker and smaller than that of the left. The respiration too is somewhat weaker in the right than in the left lung. The heart's action was very feeble, and unattended with any anormal sound. There was no bruit de soufflet corresponding to the seat of the pulsation, and dull sound on percussion. Our diagnosis was, *Aneurism of the ascending and arch of Aorta.* No great change took place in the phenomena, except that both lungs every where exhibited râles indicating bronchitis, which was much relieved by leeches applied both anteriorly to the top of the sternum, and posteriorly between the shoulders. The respiration became more markedly stridulous. His countenance wore an expression of deep distress. He almost constantly observed the sitting posture, with his knees drawn up. After the application of leeches a bruit de soufflet was heard in the seat of the pulsation, which never appeared as a distinct tumour. The difference in the pulses at the wrists, as also in the respiration in the two lungs, continued. He now became subject to most violent paroxysms

of dyspnœa, in which his sufferings were beyond expression. In these he had a wild staring expression. We first tried the effect of bleeding from the arm, but it did not seem to produce any good effect. We next tried antispasmodics and found them to yield him great ease. However the paroxysms increased in violence and the remedies lost their effect, and in one of these paroxysms he expired.

Examination twelve Hours after Death.—Considerable congestion of the superficial veins of the brain. The aorta, immediately from its origin, without being much increased in size, is very much thickened and hardened in its structure, so as to render its division by a cutting instrument difficult. Its internal surface is very irregular, and exhibits an appearance somewhat similar to that assumed by portions of the gastro-intestinal mucous membrane, when thrown into folds by its sub-mucous cellular tissue becoming indurated and contracted from inflammation. Such is the condition of all the ascending portion of the artery. Just as it emerges from the pericardium it swells into a tumour about the size of a small orange, lying across the trachea, which it compresses and flattens, causing a doubling in of the cartilaginous rings where they end in the membranous portion posteriorly. It presses more on the right than on the left side. This tumour exhibits a vertical depression on its anterior surface, dividing it into two unequal portions; the larger lying to the right of the trachea, while the smaller presses upon it. The right subclavian and carotid arteries lie behind the larger portion of the tumour, quite to the right of the trachea, while the left subclavian and left carotid bound the smaller portion; the artery then resumes its ordinary dimensions. On opening the tumour there is a distinct ridge or bourrelet marking the origin of the dilatation of the artery into the tumour. It is impossible to say if the internal lining of the artery passes beyond this ridge into the tumour. The anterior part of the tumour is filled with lamellated fibrin, while the posterior part is quite bare, exhibiting the flattened elliptical

mouth of the arteria innominata. Corresponding to the depression observed on the external surface of the tumour is an internal ridge dividing the cavity vertically into two chambers, each containing its own distinct coagulum. It was in fact a bilocular aneurism. There was a large obliterated vein attached to the anterior of the tumour; the heart was loaded with fat; the aortic valves were healthy. The condition of the ascending aorta was peculiar. It had not undergone any atheromatous degeneration, but exhibited the thickened, indurated condition of common inflammation; it was as hard as cartilage. The bronchial mucous membrane was very much congested; the lungs were in a state of extreme engouement.

This case presented several interesting features besides that for which we introduced it, viz. the particular mode of death. It exhibited to us the double pulsation, which has been observed as a constant symptom of aneurisms occupying this portion of the artery, but the explanation of which is still a desideratum. It also showed us how the situation of the tumour will affect respiration, and make a difference in the pulses at the wrists. It added besides one to our many cases of thoracic aneurism, in which the tumour exhibited no permanent anormal sound, but only an occasional one and that when the means employed as a remedial measure yielded an easy explanation of its appearance; when it did appear, it was after depletion. Dr. Stokes has already alluded to this point as influencing the regimen of aneurismal patients, that low diet or depletion deprives the blood of its coagulating property, or diminishes its fibrine, and thus opposes nature's *modus medendi* in this disease. Dr. Corrigan also notices it in his observations on the phenomenon Bruit de Soufflet. A case closely resembling the one just detailed has been recently in our hospital under the care of Dr. J. Ferguson, and which presented in a very striking manner the phenomena indicating the existence of an aneurism of the ascending and commencement of the arch of the aorta. The subject was a man

about 40 years of age. The first features of the case that arrested attention were the hoarse, croaky voice and inspiration, and absence of pulse at the right wrist. There was great fulness of the neck and congestion of its veins, as well as of those of the right side of the chest and right arm. Percussion yielded a dull sound at the top of the sternum, and at right sterno-clavicular articulation. Corresponding to this there was a distinct double pulsation much louder than that of the heart, but differing in no other appreciable respect from it; there was no anormal sound in either. He died suddenly, having been joking with the patients in the ward five minutes before, and when he thought he was getting better. Examination of the body discovered the pericardium full of liquid blood. The aorta, as it arose from the heart, gradually dilated into a tumour the size of an orange, which pressed upon the trachea and flattened it. This dilatation occupied the ascending and transverse arch of the aorta. The walls of the artery were very much thickened from their origin at the heart, where there was no dilatation of the vessel, to the tumour, whose limits internally were marked out by two projecting ridges, one about an inch from the semilunar valves, and only occupying part of the circumference of the vessel; the other immediately beyond the origin of the left subclavian and carotid arteries, completely surrounding it. The internal surface of the tumour was rough and uneven. The only communication that could be discovered between the cavity of the aneurism and the pericardium was a small hole scarcely capable of admitting a crow-quill. In the superior posterior right portion of the tumour was observable a small opening that could no more than admit a moderate sized probe; this led into a small pouch or sinus into which the right carotid and subclavian arteries entered: this pouch or sinus was the remains of the compressed arteria innominata. The openings of the left carotid and subclavian arteries were seen just within the ridge constituting the left boundary of the tumour.

We cannot but feel some surprise that death should have

been so sudden, when the communication between the aneurism and the pericardium was so small. The cheerfulness which he exhibited so short a time before death prevents our supposing that the hæmorrhage was then taking place.

We have seen a similar mode of death from the tumour bursting into the pericardium, occur in a case of aneurism of the ascending aorta which was under our care several years since: the death however was less sudden; the cause of which was explained by the *post mortem* examination. The laminæ of the pericardium had been adherent through the medium of fine cellular membranes, into which the blood escaped from the ruptured aneurismal sac. The patient sunk gradually. We have in our museum the preparation exhibiting a hypertrophied heart with a partially adherent pericardium, surmounted by a large aneurism of the ascending aorta, at the bottom of which the valves are seen in a healthy condition. The sac burst by a large rent, and the blood entangled itself in the cellular membrane constituting the connecting medium of the pericardial laminæ.

Pressure of an aneurism on the œsophagus, by causing dysphagia, will furnish us with a sign of the existence of aneurism. It is a sign that exhibits itself with sufficient frequency ever to awaken our suspicion. It was it, added to the great pain and suffering of which Pigott complained, that led us to suspect aneurism in his case. We should be cautious in the use of instruments to detect the cause of the obstruction, as any force or violence would be very likely to rupture the aneurism, and thus cause certain death. A very small tumour will sometimes exercise great and most distressing pressure, as will appear from one of our cases.

It is principally upon the venous portion of the circulating system, that the pressure of an aneurismal tumour acting, gives rise to phenomena tending to indicate the disease. We need hardly observe that these phenomena will be modified by the veins subjected to this pressure. We have lately had under our care a man, aged 42, whose face, upper part of the body, hands,

and arms exhibited as dark a livid hue as any case of Asiatic cholera we ever witnessed. The history he gave of this illness was, that the day previous to his coming under our care he had gone out in the morning to take a walk, and returned in an hour, and not feeling himself well, threw himself on a sofa, when his face suddenly became swollen and of a dark purple colour. These particulars were so remarkable that we took pains to ascertain their accuracy. Besides the deep livid appearance already noticed, the face and neck, and upper part of the chest were very much swollen, the eyes were deeply suffused; there was considerable serous infiltration into the sub-conjunctival cellular tissue; the veins of the neck had a hard, corded feel, as if they contained coagulated blood; the heart's action seemed normal, except that it was heard beyond its ordinary limits, especially towards the right sub-clavicular region; there was no dull sound beyond the præcordial region; the chest sounded well both anteriorly and posteriorly, and respiration was every where distinct. The individual complained of no positive pain, but seemed to experience great distress, and discomfort. We at once diagnosed an obstruction in the descending cava, feeling satisfied that the congestion was due to venous obstruction, and that its extent could only be explained by its being in this vein. The question next arose, upon what this obstruction depended? Our first impression, and which we communicated at the time, was, that it was an aneurism, but the suddenness with which the phenomena presented themselves, he stating that he had been quite well up to the period of his present illness, and the little actual evidence that we had of an aneurism, did not appear to us to warrant the impression. We repeated our examinations of the heart, over and over again, suspecting an aneurism, but never detected any anormal sound, nor even any increased action, but only an unusual extension of its sounds. The patient derived some relief from being blooded from the arm, and being cupped in the cardiac region, but it was very temporary; his oppression and distress increased in urgency; his intellect seemed to be tor-

pid, so that when questions were addressed to him, he took some time to answer. Although we expected from the state of congestion of the upper parts, that he would have soon fallen into a deep coma, yet this was not the case, he continued to complain of an indescribable anxiety which he referred to the chest. We observed to those who saw the case with us, that his disease was very like what we should expect to result from the circulation of blood not duly arterialized. A remarkable feature of the case was, that while the pulse at the wrist was very feeble, that of the femoral arteries was strong, and the latter continued to be felt for several hours after the former had ceased. He expired in the midst of this anxiety and suffering, after having been five days in hospital. The dark colour so remarkable during life immediately disappeared after death. The following phenomena presented themselves.

Examination of the Body made twelve Hours after Death.—On opening the thorax, the lungs were seen to meet in front of the heart; the laminæ of the pericardium adhered through the medium of fine cellular tissue, in the midst of which were several small ecchymoses; the surface of the heart exhibited many spots of purpura; the right auricle and ventricle were distended with a large mass of firm, greenish, yellow fibrine. Directing our attention to the superior cava where we expected to find the obstruction, we slit it up from its entrance into the heart, and found, at about an inch from this point, its walls thickened and lying in close apposition for about an inch of their length. This approximation of the sides of the vein was produced by the pressure of an aneurism of the posterior and right side of the ascending aorta, of the size of a small orange. A partial adhesion had formed between the opposite sides of the vein that were applied to each other, so as to divide its channel into two. There was a circular opening about two lines in diameter, by which the aneurism communicated with the vein at the point where it pressed its sides together. This side of the aneurism was very thin, almost transparent; the cavity of the aneurism contained no coagulum; its

internal surface was rough, and atheromatous; the aortic valves were quite free from disease.

A case the exact counterpart of the preceding, is detailed in the Lancet, August 16th, 1833, entitled—A Singular Case of Aneurism of the Arch of the Aorta communicating with the Vena Cava superior.

William Brown, coachman, aged 41, admitted into Saint Bartholomew's Hospital, July 8, presenting the following appearances: countenance œdematous and purple, eyelids tumid, with slight serous effusion under the conjunctiva; pulse 100; œdema of right upper extremity and of the trunk as far as the base of the chest, principally on the right side; clusters of minute veins, almost varicose, are scattered over the chest; and on the back are found several large cutaneous veins. Has no pain in the head, but at night feels dizzy and confused; has a cough with tough expectoration; dyspnœa and palpitation on motion; sensation of a weight on the shoulders. As long as he can remember he has had cough with dyspnœa and palpitation. He has lived intemperately, and has been much exposed to wet and cold. Three weeks ago he first perceived his face purple and swollen; for a few days previous he had pains in the neck and shoulders, which ceased on the appearance of the swelling; the integuments of the chest then became œdematous, and a week after the arm became similarly affected.

Auscultation.—The heart is heard over a greater extent than natural above the right mamma, without excess of impulse; there is a distinct bruissement opposite the origin of the aorta, which is still more evident at the top of the sternum and beneath the right clavicle: the sound is like the vibration of a string, and is heard, although in a less degree, over the right carotid. Chest dull on percussion beneath the right clavicle. The most prominent symptoms that exhibited themselves in the progress of the case were, increased dyspnœa; œdema extended to scrotum and ancles; delirium, with tendency to slumber. For the last three days of his life delirium was almost constant.

Autopsy Twelve Hours after Death.—Adhesion between the pleura in both sides. Corresponding to the three upper ribs, on the right side, was a tumour as large as the fist, connected with the lungs that were on either side of it, and with the vena cava which was behind it on the right. This was an aneurism beginning gradually within the pericardium, and terminating a little before the origin of the innominata; it contained coagulated blood, without any separation of fibrin, or deposition of layers. The aneurismal sac was divided into two parts by a ridge, which gave the artery the appearance of terminating at that line; the internal lining, however, seemed to be continuous over it, yet from the friable state in which it was it could not be raised or reflected. The right side of the artery was principally affected. The vena cava superior contained a coagulum of blood, and about two inches above its entrance into the auricle was found a round opening communicating with the aneurismal sac, rather less in size than a six-pence; the edges of this aperture were smooth; the sac was thin at this part, and a little below the opening it was transparent. The cavities of the heart were dilated, but without any hypertrophy of their walls.

The case just detailed presents almost the same phenomena as our's. It had one, however, which was not present in our's, viz., the bruissement in the course of the ascending aorta. We are confident of its absence in our case, as we carefully examined the heart with the expectation of detecting some anormal sound, and not alone we, but many experienced stethoscopists whom the novelty of the case induced us to invite to come and see it. What was noticed as the extension of the heart's action was, no doubt, the double pulsation in the aneurismal tumour. Death did not supervene so quickly in this case after the phenomena indicating the communication between the aneurism and the vein had taken place as in our's, which we attribute to there being a greater degree of congestion in our case from the sides of the vein having become partially adherent, and thus leaving a very narrow passage for the descent of the blood. Mr. Thurnam

has quoted this case in his interesting paper on Spontaneous Varicose Aneurisms of the Ascending Aorta, in Medico-Chirurgical Transactions, vol. xxiii. He has also detailed a case of spontaneous varicose aneurism of the three sinuses of Valsalva, right auricle, and termination of the superior cava, whose phenomena bore so close a resemblance to both these cases that we shall briefly advert to it. The subject, a tin-smith, aged 35, addicted to the use of spirits, had long been subject to fits of palpitation, when he felt an uneasy sensation in the chest like something giving way while raising a heavy weight. He shortly afterwards became affected with œdema, lividity of the upper part of the body, with confusion of the intellectual faculties. The arms and chest, but more especially the face and neck, were of a livid colour and highly œdematous, and the vessels of the conjunctiva were congested. He had much cough and difficulty of breathing. There was strong impulse of the heart: a double-bellows sound was very audible over the cardiac and sternal regions, particularly the upper part of the latter. Satisfactory percussion of the chest could not be obtained on account of the great œdema, but there was obviously extended dulness in the region of the heart and upper part of the sternum. Diagnosis, hypertrophy of the left side of the heart, with aneurism of the aorta. The œdema and lividity of the upper half of the body continued, but, excepting the scrotum, did not extend to the lower half. Some dark, circumscribed, livid spots appeared on the chest: he was delirious at night, and his eyes were bloodshot. He died suddenly a week after admission. The pericardium was universally and firmly adherent; the heart larger than usual; the aorta at its origin was suddenly dilated, and formed an aneurismal cavity the size of the fist. This large cavity appeared limited to the three sinuses of Valsalva. The aortic orifice was not enlarged; the dilated arterial tunics forming the aneurismal sac were thin and very soft, and in some points, which were closed by the adherent pericardium or the walls of the auricle, were deficient. The aneurism pro-

jected into the anterior and left part of right auricle, and the termination of the superior cava stretched over its outer surface. There was a free communication of this portion of the right auricle, and the termination of the superior cava with the aneurism by two oval openings, with defined and rounded edges, which were barely capable of receiving the point of the little finger. The vena cava itself was pervious, but must have been compressed by the aneurism. The blood was fluid, and there was no fibrinous concretions in the aneurism.

Corvisart refers to a case somewhat similar to those just related (with the exception of no communication existing between the anuerismal cavity and the vein), in the following terms: "Je connois un exemple récent d'une mort pour ainsi dire apoplectique causée par la compression qu'une tumeur aneurismale aortique exercait sur la fin de la veine cave superieure, dont la lumiere etait reduite a des dimensions extremement peu considerables." The mode of death in our case was different; we cannot but regard it as the mixed effect of the venous obstruction and the communication between the tumour (which contained no clot to plug up the opening) and the vein.

The existence of aneurism in the case we have just detailed was very obscure; for with the exception of the pressure on the vein, the only evidence of its presence was a pulsation heard beyond the præcordial limits, and which being double was easily mistaken for an extension of the heart's action beyond its normal range. The meeting of the lungs in front of the heart explains why percussion afforded no evidence of the tumour. We would advert to the fact of there being no anormal sound in the tumour in illustration of an observation made by Dr. Corrigan and also by Dr. Stokes, and borne out by our experience, that neither bruit de soufflet nor any modification of it is a character of thoracic aneurism: and that when such bruit is present it may be presumed to depend on valvular disease of the heart. We have in our museum preparations of aneurism of the thoracic aorta, from its origin from the heart to its entrance into the abdomen,

and in none of the cases from which they were taken did the tumour present a permanent bruit de soufflet or any other anormal sound, if there were no disease of the heart present. We advisedly say permanent bruit de soufflet, for it will be present occasionally, dependant on causes not easily explained, perhaps on some modification of innervation, or on a more or less fluid state of the contents of the tumour.

Pressure may be exercised by an aneurism on the veins of the neck, and cause in them a remarkable fulness, imparting to the neck the peculiar appearance noticed by Dr. William Stokes. This is especially the case in aneurism of the aorta, proceeding upwards towards the top of the sternum. In our necroscopic examinations we generally find obliterated veins attached to the tumour. According as the tumour inclines to the left or right side we have a congestion of the veins of the corresponding upper extremity. The corresponding side of the chest too exhibits a similar venous congestion.

Pain, as a symptom of aneurism, does not seem to have been duly appreciated, till the interesting case of abdominal aneurism detailed by Dr. Beatty, in the fifth volume of the Dublin Hospital Reports, ushered it into notice. This case has been deemed of sufficient importance by M. Andral to copy it in all its details into his edition of M. Laennec's work. He had seen the case during life, and from the character of the pain, and from his inability to detect any organic lesion with which to connect it, considered it a case of intestinal neuralgia. When we read this most interesting, and we would add, most valuable history, we cannot but be struck with the close resemblance that it bears to a case of colica saturnina, as Dr. Beatty observed. We feel that it is to the impression that case made on our mind, we owe our diagnosis in the one which we are about to detail.

Aneurism of Abdominal Aorta, without palpable Tumour; diagnosed during Life.

Mr. H. J., aged 38. Although of a thin habit of body, always enjoyed good health. He was very fond of hunting, and

was a bold horseman, and got his share of falls, although not conscious of ever being seriously hurt. About ten months previous to my seeing him, he complained of his having suddenly felt a violent pain in the back on hearing of an accident that befel a favourite horse. After some time the pain entirely left him. When he had been free from it for about a month, it returned, and with a greater degree of severity than formerly. He felt it especially severe after exercise. He now sought medical advice, and derived some advantage from it. He used various medicines, both internally and applied to the seat of the pain in the back. However, as the relief he obtained was very temporary, and his health was fast declining, he came to town, a distance of about eighteen miles, to place himself under my care. I first saw him in November last. He called upon me at six o'clock in the evening of the day of his arrival in town. He gave me a brief history of his case, and described his pain in the back as being very severe, which I was sure must be the case, as I knew him to be a person more likely to underrate than to exaggerate his complaints. I directed for him the following draught to be taken at bed-time:

℞ Mist. Camphor. ℥i.
Liquoris Opii sedativi gutt. xii.
Etheris Sulphuric. gutt. xx. Misce.

and appointed to see him the next day, desiring him to remain in bed that I might examine him more carefully. The obstinacy of the pain, and the description he gave me of it, made me feel the necessity of such careful examination. The draught at once removed the pain, and he had a quiet, undisturbed night. We now carefully examined him. He referred the pain of the back to each side of the spine in the lumbar region. He did not suffer much from pressure here, and whatever suffering he had was at the right side. On applying the stethoscope to the epigastrium, we heard a distinct loud bruit de soufflet, of what we would designate a fine *timbre*, inclining towards the right hypo-

chondrium. We were not sure if there was any tumour there; if so, it was very small. We now applied the instrument posteriorly, and heard the same sound along the spine to a much greater extent than anteriorly. The heart's action was a little excited. Pulse at the wrist not full, about 98; appetite not good; bowels confined; distressing flatulency. I determined to withhold my judgment of the case till I had repeated my examination; when if I found the same symptoms, I should not hesitate to pronounce it to be an aneurism of the abdominal aorta. On repeating the examination I found no difference in the symptoms presented at the previous one; and then communicated to the gentleman's friends my strong suspicion of the grave nature of the disease, suggesting at the same time, that for their, as well as my satisfaction, another medical man should see the case with me. Dr. Stokes did see it, and exactly agreed with my view of it. After a few days the gentleman's friends wished that an eminent surgeon should see him with me. Before he saw the case I detailed to him the particulars of it, and told him the opinion I had formed of it, and the grounds upon which I had formed that opinion. I stated that the obstinacy and the character of the pain, being described by the patient as a constant dull, aching pain, from which he was never free, and a sharp, lancinating pain, which had an intermitting character, had awakened in my mind the suspicion of aneurism; and that it was this that led me to apply the stethoscope to the epigastrium to see if there was any evidence of it there; and that thus I detected there and in the back the bruit de soufflet, which, added to the pain, appeared to me to come little short of proof of the existence of aneurism. I also stated that Dr. Stokes had concurred in my opinion of the case. The distinguished surgeon, however, saw more difficulty in the diagnosis of the case. He admitted that the bruit de soufflet was very distinct, but said that to this sign he did not attach much value, for that lately it had betrayed him into a judgment upon a case, which, according to such judgment, was soon to terminate fatally, but

which had contradicted this unhappy prognosis, and recovered. We quite agreed with him as to the little dependence to be placed upon this single sign, but only claimed for it a collateral value. But no, the memory of its treachery was too recent to have any faith placed in it. We before remarked, that another reason for this eminent surgeon not entering into our view of the case was, that he could not discover any tumour in the epigastrium. We feel confident that experience will establish the value of the pain as a diagnostic mark of aneurism, and especially under circumstances where we most require it, viz., in the absence of an appreciable tumour, whose development is hindered by its being bound down to the spine. Our consultation ended by the case being declared an obscure one, and that we must wait for other signs to afford data for a decided diagnosis. I saw no reason to change my opinion. Our patient continued under my care for six months, with very little variation in his symptoms. He complained constantly of a dull, aching pain in his back, and of a sharp, lancinating pain which proceeded from each side of the spine, and darted out at the hips. At times he found it very difficult to fix the seat of the pain. It used to come on at a regular hour, and stop for a certain time. It not unfrequently came on at midnight, and continued for from two to three hours. For a considerable time it yielded at once to the original antispasmodic draught we ordered; and to the very close of his illness, it, with the proportions of its ingredients increased, afforded him more or less relief. The heart's action was in general quiet, unless he was excited, then also a stronger pulsation was felt in the epigastrium. Although he was naturally of a most bold and manly spirit, he became as nervous as a delicate female, and often had regular hysterical paroxysms. At times he had complete intermissions of pain, and would flatter himself that he was about to get quite well, when he would be suddenly seized with the most awful pain. No medicine afforded him any relief but opium and ether. Battley's sedative was the preparation that agreed best

with him, and relieved him most. The salts of morphia did not suit him so well. The distinguished surgeon, to whom I have already alluded, met me in consultation four times, and upon the last occasion, which was about three weeks before our patient's death, being pressed by his relations to give his opinion as to what the disease was, and whether it was aneurism, he replied, "that he did not consider it right to guess in such cases." For the last fortnight of his illness his pain was so severe, and his spirits became so depressed, that he never left his bed. The quantity of Battley's sedative that he now took was very great. The sharp, lancinating pain increased in severity. He felt it dart farward into the abdomen, into the groin, and often complained of it in the left knee. He suffered greatly from dyspesia. In the midst of this awful suffering I was sent for to come to see him in great haste, for that he had suddenly got a great change for the worse. We found him in a state of the greatest agitation and alarm, complaining of the most excruciating pain, which he referred to the left side, between the last rib and the ilium. We applied the stethoscope to the epigastrium, but could no longer discover the bruit de soufflet there. There was a heaving motion communicated to the left side, and a kind of obscure, indistinct murmur could be heard. The heart's action was extremely strong and rapid. He was bathed in profuse perspiration. The abdomen was very tympanitic. He complained of pain passing down into the left testicle. The pulse was about 150 in the minute. He complained of a weak, sinking sensation. We directed opiate stupes to be applied to the seat of the pain, and ordered his usual medicine of camphor, Battley's sedative, and ether. He continued in a sinking, fainting state, but with his mind and intellect entire for thirty-six hours, when he expired. The examination of the body was made twenty-six hours after death in presence of Dr. Thornhill, of Skerries (under whose care Mr. J. had first been), and Dr. J. Macdonnell, who also saw the case with me during life. The thoracic viscera presented no anormal appearance,

with the exception of the left ventricle of the heart being slightly hypertrophied. Pursuing the aorta into the abdomen, the vessel, just at the cœliac axis, seemed to swell into a flattened tumour not much, if at all, raised above the spine, and extending more to the right side. This tumour appeared to be about three inches in breadth and about two inches and a half in length. On detaching the artery from the spine, a circular opening, about an inch in diameter, was observed on its posterior surface, just opposite the cœliac axis. This opening led to a cavity formed in the bodies of four vertebræ, of which the two centre ones, being more deeply hollowed out, contributed most. In contact with the rough, irregular, eroded bone lay a mass of firm, lamellated fibrin, which was only kept in its place laterally by the cellular membrane reflected from the sides of the artery and attached to the spine. This attachment on the left side seemed to be torn. The artery above the tumour seemed larger than it should be, while where it emerged from the tumour it was much diminished in size, being scarcely larger than the common carotid. On the left side of the spine all the viscera were thrown forward by the hollow, which should naturally exist in this situation, being filled up with a dark substance shining through the peritoneum. This was an immense mass of blood, which was infiltrated into the cellular membrane and parts behind the peritoneum, of which it formed an exact mould. We removed the mass, which extended from the diaphragm to Poupart's ligament; and which was no easy matter to effect, as it had so incorporated itself with the tissues and structures situated here. When taken out it presented no other appearance than that of a large, firm clot of blood, with cellular membrane and muscular fibre spread upon it and nervous filaments coming out of it. We proceeded to make a longitudinal section of it, and found the kidney imbedded in the centre of it. The blood had dissected this organ from its thick envelope of cellular membrane. The difference between the fibrin that formed the tumour on the spine, and the large coagulum, which was evidently the fatal hæmorrhage, was very striking.

We forgot to state in the course of the case that, while under our own care, he had an attack of gout.

We would now ask had we a warrant for the confidence of our diagnosis? We shall not content ourselves with appealing to the issue of the case: we would ask what else could it have been? We were well aware to how little value an epigastric pulsation alone is entitled as a sign of aneurism; or at least how often we meet with it when we have no reason to suspect aneurism. But is it in a strong, robust man that we may expect to meet with this phenomenon? Such has not been the result of our experience. Again, what was the explanation of the pain? It had not the character of a ordinary rheumatic pain. No; it had a peculiar character which attracted our attention first—its twofold character, of a constant dull pain, and an occasional sharp, darting pain. When I detailed this case to the Pathological Society I drew the attention of the Society especially to this character of pain as diagnostic of aneurism.* A pupil present at the meeting, shortly after hearing these details, in the exercise of his duty as clinical clerk in one of the hospitals, had to take the history of a case, which the physician under whose care it was considered to be cancer of the stomach. The pupil, however, recognizing an exact correspondence between the description which the patient gave of his sufferings and that which he had heard described by me as the suffering of my patient, inferred that the cause was the same. There was in this case a pulsating tumour in the epigastrium. It was the physician un-

* Since writing the above, I learn from Surgeon Mac Donnell of Meath Hospital, that precisely the same thing occurred at Meath, as at Jervis-street Hospital: that a junior student heard me recount this case at the Pathological Society on Saturday, and on the next Monday he diagnosed a case of abdominal aneurism in the hospital, led to it by the coincidence of the character of pain and epigastric pulsation with my description. Dr. Stokes afterwards exhibited the pathological specimen at a meeting of the Pathological Society. The aneurism burst into the substance of the right lung, and produced this novel species of pulmonary apoplexy. The fact testifies to the value of the diagnostic mark, and also to the usefulness of the Pathological Society.

der whose care the case was, a man as distinguished for his candour and love of truth as for his talent and professional attainments, who told me the circumstance. He admitted that he was not aware that pain was a symptom of abdominal aneurism, and as it was so often present in cancer of the stomach, as well as a tumour and epigastric pulsation, it appeared to him to be this latter disease. We compared the notes of his case with those of mine, which so exactly coincided, that he might have applied to the subject of my case, and I to that of his—"Mutato nomine de te, Fabula narratur." The case appears to us so interesting in connexion with our subject that we shall detail it.

John Collins, ploughman, aged 35, admitted into Jervis-street Hospital, January 30, 1842, presenting the following symptoms. A fixed, immoveable tumour is felt in the scrobiculus cordis, about three inches below the ensiform cartilage, and a little to its left side, having a round even surface. There is in the tumour a distinct pulsation synchronous with the pulse at the wrist. On applying the stethoscope, no bruit de soufflet can be heard in the tumour, but it is very distinct over the direction of the aorta, from the tumour in the epigastrium down to the bifurcation of the iliacs. He complains of pain in lumbar region, and severe pain shooting down in the direction of left groin and left supra-renal region; also a dead, constant, heavy pain in the scrobiculus cordis. He cannot bear pressure over the tumour long, sometimes it seems more sensitive than at other times. Pressure on loins, or on left renal region, or stooping, causes much pain. He always feels increase of pain after eating. Bowels constipated. He complains much of flatulency. Urine contains a good deal of lithic acid deposit. Pulse 75, regular. No pyrexia. Has an anxious expression, indicating much suffering. He states that last August he got a severe wetting when stripped at work, after which he caught cold, followed by rigor and chilliness, which he has ever since felt. He now felt severe pains in abdomen and loins, extending into each groin. He now left off work and took to his bed, to which he was con-

fined for eleven weeks. About three weeks before Christmas returned to his employment, but was soon obliged to relinquish it, in consequence of the aggravation of pain which he felt.

January 31. He complains of having felt very great pain during the night, which prevented him sleeping. Pulse not accelerated.

February 2. Pain attacks him in paroxysms, generally commencing in the evening.

February 25. Symptoms have undergone very little change since last report. The violence of the pain somewhat lessened by opiates.

February 26. His appearance is greatly changed. He complains of having suffered intense pain during the night. His countenance has assumed a most ghastly aspect, indicating great suffering. He refers his chief pain to right lumbar region, extending from this into right groin. Pulse small and weak. Surface bedewed with clammy perspiration. It was plain that internal mischief had taken place.

Next day, reported as having suffered intense agony in right side, indicated by great restlessness, and by his anxious expression of countenance. The pulse gradually failed; the extremities became cold, and death took place about thirty-six hours from the time the aggravated symptoms appeared.

Examination of the Body sixteen Hours after Death.—On opening the cavity of the abdomen, the peritoneum lining the right renal lumbar and iliac regions was detached and pushed forward by a large coagulum of blood, extending from the diaphragm to the brim of the pelvis, bounded internally by the bodies of the vertebræ, and externally by the right abdominal wall. On raising up the stomach, a tumour was perceived rising from the front of the aorta, extending from the diaphragm, with with which it was closely connected, down to the superior mesenteric artery, which ran obliquely through the inferior extremity of the tumour, and which, with the renal arteries, must have suffered considerable compression during life. The crura

of the diaphragm were overlapped by, and closely attached to, the walls of the tumour. On detaching the aorta, and slitting up its posterior surface, the tumour was seen to communicate with this vessel by a circular opening, about an inch and a half in diameter, which involved the opening of the cœliac axis; the gastric and hepatic branches of which escaped through the walls of the tumour. On the edge of this opening the lining membrane of the aorta was seen to terminate by an abrupt, irregular margin, the tumour being formed by the cellular coat of the artery lined by organized lymph. Anterior to the edge of the right crus of the diaphragm was seen an irregular opening, large enough to admit the finger, communicating from the interior of the tumour with the centre of the large clot. The interior of the clot was thick, uncoagulated blood. There was a small carious spot on the body of the twelfth dorsal vertebra.

We see how exactly the pain complained of by the subject of the preceding case agreed with that of the subject of our case, presenting the twofold character of a constant, dull, aching sensation, and of an intermitting, sharp, lancinating pain.

We are well aware that cancer of the stomach is often attended with intense pain, when the disease takes on the ulcerative process; but the pain is constant, and is described more as a soreness than as a sharp pain. If we have seen aneurism mistaken for cancer, we have also seen cancer of the stomach mistaken for aneurism.

When the diagnosis of a disease depends upon a symptom only to be learned from the patient's description, and when we reflect how vague such description often is, we can scarcely wonder that the physician should sometimes be betrayed into error; but he, on the other hand, is bound to know when he is dependant on these commemorative signs, and should so conduct the examination of his patient as not to allow himself to be misled by such vague description.

While Mr. J. was under our care, the following case presented itself to us:

A Series of Aneurisms of descending Aorta, diagnosed before Appearance of external Tumour.

Richard Pigott, shoemaker, aged 43, a man of intemperate habits, was received into my wards, December the 14th, 1841. We saw him at the instant of his admission, when he was literally shouting from the violence of the pain, which he referred to the lower part of the chest on the left side. He had his legs drawn up and his body bent forward, so that at first I apprehended a case of strangulated hernia, or of peritoneal inflammation. The friends who accompanied him, and to whom these loud expressions of suffering were not new, did not seem much alarmed, which quieted our fears somewhat. We had him laid in bed, and carefully pressed the abdomen to see if there were any grounds for our first suspicion; but he complained of no pain on pressure. He had no sickness of stomach; no acceleration of pulse, nor heat of skin. The respiration seemed pretty free. It appearing to us to be more like an attack of colic than any think else, we ordered for him a carminative antispasmodic draught. Next day we found him much more composed, and complaining only of a distressing sense of fulness and flatulency in the abdomen. He told us too that he had a difficulty of swallowing, under which he had laboured for a considerable time. The account he gave of himself was, that for three years he had been in indifferent health, which he attributed to a fall that he got while drunk; his foot slipped, and he fell with his left side against a sharp stone. From that time he said he had never been free from pain in the left side below the mamma. The difficulty of swallowing he refers to behind the top of the sternum. In order to ascertain the reality, and if possible the cause of this obstruction, we directed a gum elastic tube to be cautiously passed down the œsophagus. After having passed about four inches it was met by an obstruction, when we had it immediately withdrawn. This phenomenon, coupled with the pain, especially from the character it presented at the time of

his admission, made me suspect aneurism. On farther examination I discovered a greater turgescence of the veins of the left than of the right side of the thorax, and we had no doubt that the respiration in the left lung, especially under the left clavicle, was more feeble than in the right. We now questioned him more closely as to the nature of the pain, when he described three distinct kinds; one which he designated as a dead, dull pain; another a sharp, nipping pain; and the third an uncomfortable, stuffing sensation. Fully satisfied as I was of my diagnosis in the case of Mr. J., who was still under my care, and seeing the coincidence between the character of his sufferings and Pigott's, I felt an equal confidence in my surmise that the latter case also was one of aneurism. Pursuing our stethoscopic examination we could discover a very obscure pulsation through the chest. It seemed to be a general heaving, expansive motion, communicated to all the left side of the chest, and appeared quite independent of the action of the heart, which could be heard very quietly pulsating in its natural position. In the course of a very few days, if we had any doubt on the presence of aneurism, it was cleared up by our finding a distinct pulsation in the back between the posterior margin of the left scapula and the spine. Each day this pulsation became more distinct, and admitted of our perceiving in it a single sound, while as yet there was no trace of a tumour. The antero-posterior diameter of the left side of the chest became greater than that of the right, and, as it did, accordingly the respiration anteriorly became more feeble. A dull sound on percussion was now perceived between the posterior margin of the scapula and the spine where the pulsation was first discovered. Deglutition was very difficult, in fact almost impossible, unless with the body very much inclined forwards. His sufferings were very great, and his invariable description of it was that it was a stuffing sensation, evidently due to the compression of the lung from the encroachment of the aneurism on the dimensions of the cavity of the side; and a sharp, nipping pain, which he only felt occasionally,

and which he represented as darting along the ribs in the direction of the intercostal nerves ; and a dull, aching pain, from which he was never free, which he referred to between his shoulders, and which he said felt like a load on his back. His constant position was with his knees drawn up to his chin, and his body as much bent forward as possible ; he also experienced great relief from going on his hands and knees ; and it was in this position too he swallowed with greatest ease. He had a slight stridor on inspiration, but it was not very remarkable. Besides the varied pain in chest he was distressed very much by flatulency, and a sense of fulness in the abdomen ; his bowels too were obstinately constipated. Opium and assafœtida enemata afforded him great relief. The poor fellow said that the ease that immediately followed those means was a very " heaven upon earth to him ;" for that for two years he did not know what it was to be free from torture. The heart's action was quite natural, with the exception of being occasionally slightly excited. The pulse averaged 84, and was the same in both wrists. After being about a month in hospital, a distinct oval tumour exhibited itself in the back, between the posterior margin of the left scapula and the vertebræ ; its long diameter was parallel with the spine ; there was in it a distinct, single, expansive pulsation, which could be well felt by placing one hand on the chest anteriorly, and the other on the tumour. The tumour had made its way to the surface by producing the absorption of a portion of three of the ribs. This tumour, from being scarcely raised above the surface, soon assumed a considerable elevation. On the occasion of one of our visits, he complained to us of his having being seized early in the morning with a violent pain in the left side, which he described as radiating from below the left mamma, and passing to the position of the tumour (of whose existence, although it had attained a considerable size, he was not aware), and also as proceeding to the right side. Deglutition became very difficult : he could take no solid food. The respiration was more stridulous, but still much less so than we

had often heard it in such affections. Percussion of the chest anteriorly in the subclavicular and mammary regions yielded what Dr. Stokes significantly designates a tympanitic dulness; the respiratory murmur had ceased to be heard. We were able to pursue the gradually increasing weakness of the respiratory murmur in these parts until it had entirely disappeared, and coincident with this was an increased depth of the side from before backwards. From the time of the seizure of pain in the left side a point apparently lower than the heart became the situation to which he referred his principal suffering. We could not reconcile the various symptoms which he exhibited, and the pain in so many different directions, with a single aneurism, and therefore pronounced our diagnosis of the existence of more than one. Large quantities of opium, both in the form of Battley's sedative and the watery extract of opium, for a considerable time gave him ease from what he described as his sharp, nipping pain. It then lost its effect, and he became a prey to most terrible suffering. He was now much emaciated. His deglutition became greatly obstructed, so that nothing but fluids could pass. There was a great accumulation of mucus in the trachea and bronchial tubes. The heart beat very quietly; nor was there any remarkable acceleration of pulse. The tumour in the back had now attained to a considerable size, being about six inches in length, and projecting very much beyond the surface. Its pulsation was heard very low down, and also very distinctly anteriorly, but always distinguishable by its singleness from the heart's action, which was heard in its natural position. His only easy position was with his body gathered up into a ball, with his chin and knees almost meeting. No remarkable change ensued before death, with the exception of a great increase of mucous effusion into the trachea and bronchial tubes. He seemed to be worn out with the violence of the pain and the weakness of inanition from the obstructed deglutition. He expired with a slight convulsion, having been nearly four months under our care. His mind was quite free to the last.

Examination twelve Hours after Death exhibited the following Appearances.—The right pleura pulmonalis and costalis adhered through almost their entire extent, but could be easily separated. An oblong oval tumour, about four inches in length, and two in breadth, ranged along the sides of the bodies of the fourth, fifth, sixth, and seventh dorsal vertebræ, behind the root of the lung, and covered by the pleura. The left cavity of the thorax was greatly lessened in its dimensions by the hollow along the sides of the bodies of the vertebræ being filled up from about one-third of the apex of this cavity to its base. The lung was very much shrivelled and condensed in its structure; its posterior surface adhered so intimately to the corresponding portion of the pleura costalis that they could not be separated. On removing the aorta from its position, we found, just where it descends on the bodies of the vertebræ on its posterior surface, there was a large circular opening about an inch and a half in diameter, which led on the right side to the oval tumour along the sides of the vertebræ, and on the left to an immense cavern which lay behind the pleura costalis as it lines the posterior wall of the thorax, and extending nearly all the length of this cavity down to its base. The boundaries of this great cavity were; anteriorly the pleura costalis; posteriorly the muscles of the back, and in parts only the skin and cellular membrane; internally the bodies of the vertebræ extensively destroyed; inferiorly the reflexion of the costal pleura on the diaphragm. It contained an immense mass of both liquid blood and lamellated fibrin. The fibrin was applied to the surface of the pleura, while the liquid blood was more posterior. And so closely did these lamellæ of fibrin which lay in contact with the external surface of the pleura, resemble the atheromatous, warty, diseased condition of the internal coat of an artery, that it struck us how easy it would be to fall into the mistake that this fibrin was really the internal coat of the artery dilated into an aneurism. The bodies of the vertebræ, to which the opening in the artery corresponded, were extensively destroyed, as well as the intervertebral cartilages,

but as usual, in a much less degree. About an inch and a half lower down, another opening, somewhat less in size, presented itself in the posterior wall of the aorta, and led into a cavity formed in the substance of the vertebræ. This cavity contained coagulated fibrin lying on the bare bones. About an inch lower still, another opening in the posterior wall of the artery led into another cavity in the eroded bodies of the vertebræ. Still lower down than this, the large cavity behind the left pleura by its most inferior part communicated with the tumour lying on the right side of the bodies of the vertebræ. This tumour was composed of lamellated fibrin in all its extent except at its inferior part, where fluid blood seemed to mingle with it from the opposite side, the bodies of the vertebræ being so destroyed and broken down as not to oppose any obstacle to it. From the front of the artery, nearly opposite the first opening in its posterior surface, proceeded a small tumour, the size of a small walnut, containing firm, coagulated fibrin; this it was that pressed against the œsophagus and caused the difficulty of deglutition. In every opening in the artery we were able to discern very plainly the abrupt termination of the lining membrane on the edges. We also saw most distinctly that the pleura and cellular membrane alone constituted the sac of the aneurism, divided into its two chambers, on each side of the spine. The heart was perfectly healthy in all its structure and proportions of its cavities. The ascending aorta exhibited no appearance of disease. A little above the first opening in the artery its internal membrane began to exhibit an atheromatous condition. The bodies of five vertebræ were so extensively diseased, that it is wonderful that no opening took place into the spinal canal; the intervertebral cartilages shared in the destruction, but, as we observed, more sparingly. It is almost inconceivable how life could have existed with such an amount of disease. Although the pathological appearances exhibit to us a striking specimen of a sacculated aneurism, still we are sure, that, as they developed themselves, there were originally four distinct aneurisms, and that in

their progress three at length communicated with each other; and that one only, the one that proceeded from the front of the artery, maintained its distinctness. We believe that the upper opening in the artery led into one aneurism, which for a time was confined to the spine, but which afterwards, as it increased in size, divided into the two tumours, one upon the right side of the spine, and the other on the left. That on the right side, lying more out of the direct course of the blood, contained firm laminated fibrin, apparently long since deposited there; it appeared, in fact, in the process of cure. The most anterior portion of the left was also firm coagulum, while the posterior part was fluid blood, which seemed to force its way down behind the former. We imagine also, that the other two openings in the artery led into two cavities, originally distinct, but which afterwards were thrown into one by the progressive erosion of the structure of the vertebræ. At the very inferior part of the tumour on the left side, the destruction of the bodies of the vertbræ, beside which it lay, was so complete as to allow the fluid blood to pass across the osseous *debris* to join the lowest part of the right tumour, so that we can fancy that if he had not been worn out by his great suffering and inanition from the dysphagia, life might have been prolonged to have admitted a second tumour to form, exhibiting itself posteriorly and to the right of the spine, lower down, perhaps, than that on the opposite side. The blood would easily have made way for itself behind the tumour on the right side, and have insinuated itself between it and the muscles of the back, as it did on the left. It was remarkable that such destruction of the vertebræ occurred, and no opening into the vertebral canal took place. A considerable portion of three ribs was removed by the tumour presenting in the back. The degree to which the intercostal nerves were necessarily involved, explains the severe nipping pain.

This most interesting case came under notice at the time that Mr. J.'s case was under our care; and the symptoms of this latter, particularly the pain, being the same, led us in

both to conclude that their cause was the same; and as we felt tolerably confident that Mr. J.'s case was aneurism, we looked for the same disease in Pigott, and discovered it long before any tumour presented itself externally, the only conclusive evidence, according to most pathologists, of the existence of this disease. The pain and dysphagia first awakened our suspicion, which was strengthened by the feebleness of respiration in the left lung, and the congestion of the veins of the same side of the neck and chest, and confirmed by the pulsation, which preceded by a considerable interval, the external appearance of the tumour.

We pointed out to the pupils, in the progress of the case, the mode in which the gradual growth of the tumour and the proportionate encroachment on the capacity of the chest, affected the expansion of the lung, and caused a gradually increased feebleness of respiration, until the vesicular murmur disappeared, different from the more sudden effect produced by pressure on the bronchus.

We neglected to notice the relation that the aneurism bore to the trachea, and to which relation was due the stridulous breathing which we observed to exist, but which we also remarked was not very striking. The small aneurismal tumour which proceeded from the front of the aorta pressed upon the œsophagus at the point where this latter lay closely applied to the trachea, just when about to bifurcate, so that, in fact, the pressure was exercised by the tumour upon the œsophagus which here lay before it, and through it on the trachea. In this way the œsophagus protected the trachea. The reverse is the case when an aneurism of the arch of the aorta presses upon the trachea. Here the stridor is greatest, and the dysphagia does not occur until the pressure upon the trachea bears upon the œsophagus placed behind it. The trachea protects the œsophagus in this case. Dysphagia then would appear to be an earlier symptom, and a more prominent one, of aneurism of the descending aorta than of the ascending, and stridulous breathing, on

the other hand, to be an earlier and more prominent symptom of aneurism of the ascending, and of the arch of the aorta. In the latter case the pressure upon the œsophagus is through the trachea, and in the former it is through the œsophagus on the trachea.

We would remark upon the freedom of the tumour from any anormal sound in its pulsation; there was no murmur; it was a simple, single, diastolic swell. The slight disturbance that existed in the heart's action in this case is remarkable, when we consider the great amount of organic mischief present. It is singular also, in a physiological point of view, that the organ so sensitively alive to all derangements of other parts of the economy, that we almost depend upon it to apprise us if anything be going wrong; that the organ to which we, as it were, commit the guardianship of the system, should be so tranquil and unmoved, when disease had committed such destructive ravages in its own territory. It is to this apathy of the heart under serious disease affecting the vascular system, that we owe much of the obscurity that attends this important class of disorders. Dr. Hope remarks, that he had seen the impulse of the heart prodigiously increased by an aneurism of the aorta, forming a solid fulcrum immediately behind the heart. Our case exhibited an aneurism bearing this exact relation to the heart, both in its local position and consistency, and yet not affecting its action in this way; nor was there what he terms the double jog, or diastolic and systolic impulse.

We recur to the symptom for whose special exemplification we introduced the last two cases, a symptom, which, when we read the details of internal aneurisms, we frequently find noticed, and find it nearly as often leading to error; we allude to the pain. In most of the cases to which we refer, the pain in the early stage of the disease has been looked upon as rheumatism, and a treatment suited to this disease has been employed. Perhaps no positive mischief resulted from this, still this is no vindication of ignorance. A physician should, if possible,

know what the disease is that he has to treat, whether curable or incurable; and although the latter be beyond the resources of his art as to permanent benefit, yet there are few cases where something cannot be done to alleviate suffering. One of our cases of aneurism, from which the individual suffered very much, but whose sufferings still derived some alleviation from narcotics, was placed under the care of an homœopathist, who of course began his treatment by impugning the diagnosis that had been given of the disease, denying that it was aneurism. In the next place all other medicine must be laid aside, then the little white powder was to be dissolved in thirty-six table spoonfuls of water, and of this one spoonful was to be taken every sixth hour. My patient was of course withdrawn from my care for the time; however not for long, for at midnight of the second day I was sent for to see him, under a paroxysm of suffering so intense, as I had never before seen him in, although he had been several months under my care. By dint of Battley's sedative, after a considerable time, he got ease. I do not mean to charge upon the mysterious little white powder this unusually violent attack of pain, but I do charge it upon its being substituted for what did controul and kept the pain within the limits of endurance, —all that could have been expected from medicine under the circumstances.

We believe that we were the first to notice in our communications on aneurisms to the Pathological Society, the twofold nature and character of the pain, the constant, dull, aching pain, and the occasional sharp, darting, lancinating pain. We believe that this character of the pain will serve, when present (for we have already admitted how often aneurism is unattended by any pain), as a pathognomonic sign of aneurism. We are not aware under what other morbid conditions a similar character of pain presents itself.

The question has often suggested itself to us, nor have we yet been able to satisfy ourselves upon the point, whether this twofold pain be one and the same, differing only in degree; or

if there be two distinct pains, independent of each other, and connected with different structures.

The intermitting character of the sharp, lancinating pain, would seem to identify it with the Neuroses; as well as many symptoms confessedly nervous, which we observed in our cases, and which have been noticed in the records of other similar ones. Thus have we observed the strongest men, when affected with this disease, exhibit as marked hysterical symptoms as the most delicate female, and one of our patients complained of globus hystericus. We have already observed how Dr. Beatty was struck with the resemblance that the symptoms of his interesting case of abdominal aneurism bore to those of colica saturnina, which is admitted to be a Neurosis; and how these symptoms made M. Andral diagnose it a case of intestinal neuralgia. Our cases also exhibited similar symptoms, viz., colic pains, flatulency, constipated bowels, &c. They are, in fact, the same symptoms that present themselves in that modification of disease designated spinal irritation, which seems to depend upon some morbid state of innervation, whose precise nature we do not exactly understand; and if internal aneurism sometimes exhibits itself with the symptoms only indicative of derangement of the functions of the ganglionic nerves, but without pain, it thus conforms more to spinal irritation, which also may consist in mere derangement of the functions of the ganglionic nerves, without any pain or tenderness in the spine. In some of these cases of spinal irritation, the most acute pain is felt when the slightest pressure is made upon the spine; and in one case which I saw some years since with Dr. J. C. Ferguson, syncope resulted from the pain produced from very moderate pressure. These cases are most common in nervous females; and many a young person for it has been subjected to the treatment, both local and constitutional, of disease of the spine, such as depletion, strong counter-irritation, perpetual confinement to the sofa, &c., means exactly suited to aggravate the disease. Happily such mistakes occur less frequently now than formerly; yet their oc-

currence is still sufficiently frequent to tell us that they are not extinct.

We require to be reminded that epigastric pulsation is not an unfrequent phenomenon in females affected with spinal irritation, and my friend, Dr. Aquilla Smith, told me of a lady having come from the country to place herself under his care for what was pronounced to be aneurism of the abdominal aorta. The grounds for this opinion consisted in the pain on pressing the spine, and epigastric pulsation. He at once saw, from the habit and temperament of the individual, that these phenomena were purely nervous. He was not imposed upon by the spinal tenderness, knowing how to distinguish between it and the pain attending aneurism.

The patient affected with aneurism can bear pressure better than the subject of spinal irritation; the latter shrinks from the slightest touch, and often even before being touched.

Aneurism being so much more frequent with men than with women, the complaint of pain in the back and epigastric pulsation should excite more suspicion in the mind of the physician, and claim a more careful examination, when exhibited in a man than in a woman; whereas the bias of his suspicion should be, when they occur in a female, towards their being nervous symptoms; yet as aneurism occurs in females, and as there are hypochondriacal men, as well as hysterical women, the mind ought to be free to exercise an unprejudiced judgment.

What explanation now are we to give of the fixed, constant, dull pain? Are we to connect it with the destruction of the structure of the vertebræ, with which it is so often associated? Or does it depend upon the position of the aneurism in reference to its being so circumstanced as not to be free to enlarge itself? Or is it the characteristic modification of the sensibility of arterial tissue when inflamed?

We feel how difficult it is to answer these several questions, or to ascribe to any, exclusively, the phenomenon in question. It may be that all three have a greater or less share in it. In

reference to its dependence upon the destruction of the vertebræ, we can affirm that the greatest amount of suffering we have witnessed has been connected with this. But in such cases, as the destruction of the vertebræ arose out of the aneurism not being free to make its way otherwise than through this resisting structure, it is not easy to say how much of the pain was due to the strain on the other parts connected with it, and that bound it down to the spine. Our two cases that we detailed to illustrate the character of the pain, and Dr. Beatty's valuable and often alluded to case, all combined these two conditions, so as to leave it in doubt upon which it depended. In these cases also, the aneurism was connected with the posterior part of the artery, which is a ground for our differing with Dr. Harrison's opinion, expressed in his valuable letter addressed to Dr. Stokes, in the fifth volume of the Dublin Medical Journal, page 435, "that although he had not sufficient facts before his mind on which to ground the assertion, he should yet consider that when aneurism arises from the forepart of the abdominal aorta and extends into the cavity, pain and more or less disturbance of the adjacent viscera will be more likely to occur." Nor have we much difficulty in recalling to our mind cases in which the aneurism proceeded from the anterior part both of the thoracic and abdominal aorta, in which there was comparatively very little pain. Many of our readers, I am sure, will remember the case of abdominal aneurism exhibiting itself in the form of a pulsating tumour in the epigastrium, in a respected member of our Profession, who suffered so little from his disease that he practised his Profession up to the very period of his death, and was a constant attendant at the meetings of the Pathological Society, where he often witnessed the exhibition of specimens of the fatal disorder under which he laboured, and of which he was soon to become a victim. Nor was it alone to the interests of his Profession that his mind was free to yield itself, but ever anxious to promote good feeling and fellowship among its members, he had subscribed his name to be present at the

annual dinner of the Medical Association, which was to take place on Wednesday, when his death occurred on the preceding Sunday. Although there was no *post mortem* examination, yet we may presume, from the direction taken by the tumour, that it was from the anterior part of the artery it arose. We have a very distinct recollection of a case of aneurism of the abdominal aorta, occurring in Sir Patrick Dun's Hospital, under the care of Dr. Osborne, in the person of a female about thirty years of age. A large pulsating tumour presented itself in the epigastrium. The patient's suffering was not great. She died of hæmorrhage consequent on the bursting of the tumour, which communicated with the forepart of the aorta by a large circular opening.

The only case of aneurism, proceeding from the front of the abdominal aorta, and attended with much pain, that now occurs to us, is the one to which we have already alluded as having been recognized by the coincidence of the patient's description of his pain with that of our patients similarly affected. Although the tumour in this case was connected with the front of the aorta, yet it was confined on its sides by the crura of the diaphragm. These instances, both affirmatively and negatively, oppose Dr. Harrison's opinion, which he admits he has had not sufficient grounds to establish.

The freedom from pain that we have observed to attend aneurisms proceeding from the front of the aorta, would prevent this negative character being available as a diagnostic mark of hepatic aneurism, as Dr. Stokes suggests that it might be, in the details of his case of aneurism of this artery. The little pain felt by his patient leads us some way on our inquiry as to the cause of the pain in such cases. It proves that it is not the connexion of the aneurism with the sympathetic and ganglionic nerves to which it is due; for, of course, the hepatic aneurism must have been connected with the hepatic plexus of nerves, and yet no increased sensation was the consequence.

As to the share which the affection of the arterial tissue it-

self has in the production of the pain, we should suppose that if it contributed in any appreciable degree, this would be a constant feature of aneurism, which we know it is not; we should also expect that the degree of pain would be in proportion to the size of the aneurism, which is so far from being the case, that the largest aneurism we ever witnessed was only attended with great dyspnœa from its pressure on the lungs, but with no pain in the tumour itself.

Let the pain be accounted for how it may, what is most important for us is to know that it does sometimes exist, and under a special and exclusive character, when we most stand in need of it to guide us; and that it is in fact a pathognomonic sign of the disease, and has served as such, notwithstanding the following assertion of the highest authority on such a point. "On peut donc dire que dans l'actuel etat de la science, il n'existe aucun moyen sûr de reconnaitre l'aneurysme de l'aorte par ses symptomes, si ce n'est dans les cas ou la tumeur peut etre sentie exterieurement, cas qui se reduisent aux aneurysmes de l'aorte ventrale et au très petit nombre d'aneurysmes de l'aorte ascendante, ou de la crosse qui usent le sternum ou dejettent les cartilages des cotes." These are the words of M. Laennec, who adds, "les douleurs terebrantes du dos ou des lombes etaient accompagnèes dans les cas dont je viens de parler, de symptomes si vagues et si peu graves que si de semblables cas si representaient à moi je n'oserais en rien conclure." We have had more temerity than M. Laennec, nor have we had occasion to repent it. In following it we have not been misled. Dr. Hope, who may be regarded as the highest authority in English medicine on this point, remarks, there is only one general sign of aneurism of the thoracic aorta, which is unequivocal and certain, viz., a tumour pulsating externally. Neither M. Laennec nor Dr. Hope seem to have apprehended the peculiar character of the pain upon which its diagnostic value depends. Nor can we reconcile with our experience M. Laennec's description of these pains, being "si vagues et si peu graves." There is no

disease whose sufferings we have found to be more truly appalling, none so awfully severe ; were there not some intermissions of pain it would be beyond endurance. With the single reservation of the pain, we consent to the equivocal character of every other sign, except the external pulsating tumour. None can be relied upon ; all the derangement of the functions of the different organs that we ascribed to an aneurism—and which we noticed as serving for signs to detect this disease in the thorax—may equally arise from other causes. Any kind of tumour, whether malignant or not, may press upon the trachea, on a bronchus, or on the pulmonary parenchyma, and modify the respiration accordingly ; or it may press upon the œsophagus, and cause dysphagia ; or on the venous trunks, and produce congestion. Nor is the evidence derivable from the tumour itself, when situated internally and out of reach of being either seen or felt, less questionable. If it occupy the ascending aorta, how likely is the double pulsation, the constant accompaniment of an aneurism so situated, to be confounded with the heart's action? And if it engage any other part of the artery, how often does it fail to exhibit a pulsation sufficiently marked to lead to its detection? On the whole then the pain, when present, seems to us to be the least doubtful sign of aortic aneurism—at least we feel bound to say, its beacon light has guided us more than any other to detect the disease.

BIBLIOGRAPHIC NOTICES.

On the Theory and Practice of Midwifery. By Fleetwood Churchill, M. D., M. R. I. A., Licentiate of the College of Physicians in Ireland, &c. &c.

Amidst the many essays on midwifery, which have lately appeared, there is not one, from whose perusal we have derived more pleasure, than that, whose title is prefixed to this article. In its composition it has evidently been the author's study to cull the scattered matter of all preceding writers, which in his judgment appeared genuine and excellent in quality, and not only carefully to select and arrange it, but so to convey information, as to bring all essential points into view, without on the one hand incurring the imputation of prolixity, or on the other falling into that meagre barrenness, which baffles the inquirer. Indeed all the productions, which owe their origin to the fertile pen of Dr. Churchill possess a characteristic, which must recommend them to every reader, namely, the very best and most modern information on the subjects of which he treats, given as concisely as perspicacity will permit. To most writers condensation is a difficult task (Pascal apologised to a correspondent for sending him a long letter, on the plea, that he had not time to make it shorter), but in no writings is this quality more requisite, and in none we would say is it less frequently met with, than in systematic treatises on medical subjects. In this respect Dr. Churchill peculiarly excels. He appears to possess the happy mode of expressing his meaning without stiffness or effort, and at the same time with the utmost brevity, so that, with respect to his works, the observation may be reversed, which Johnson applied to M'Pherson's Scottish Antiquities, "Sir, you might read half an hour, and then ask yourself what you had been reading; there were so many words to so little matter, that there was no getting through the book."

The treatise before us is divided into three parts; the first comprises the Anatomy of the Pelvis and Organs of Generation, and includes not only a description of their natural appearances, but their abnormal deviations. The chapter on Deformities of

the Pelvis, illustrated as it is with beautiful engravings, deserves especial notice. We should be inclined, however, to assign a greater frequency to that form, which may be termed the male pelvis, and which is characterized by flatness of the sternum, narrowness of the arch of the pubis, and other features, which approximate it to that of the male sex. In England, particularly in the manufacturing districts, this is a species we believe rarely met with, but our experience leads us to think it one of the most usual aberrations amongst the lower classes of Dublin, and the one which most frequently calls for the use of the crotchet.

The second part of the work comprises the Physiology of the Organs of Generation, and in this department the author has been particularly happy. He has detailed with accuracy the premonitory and accompanying symptoms of menstruation, the natural condition of the Graafian vesicle, and the changes which are supposed to occur monthly in these bodies by Lee, Gendrin, and Negrier; but at the same time expresses his opinion (in which we fully agree), that as yet, we have only presumptive proof, that the rupture of a vesicle happens at each menstrual period. The disordered conditions of this function have been reviewed with a degree of care, which renders his observations very valuable. Under the head of amenorrhœa, he has drawn the important distinction of considering such cases, according as there is, or as there is not, a menstrual molimen observable in them. This is certainly a practical point, which should be kept in mind, for where the former exists, as indicated by the secretion, at the time, of a colourless fluid by the uterine vessels, we may expect our treatment to be much more speedily efficacious, than where the uterine system remains in an apathetic condition. At the same time, we should not lose sight of the opposite classes, in whom this deficiency is met with, the patient with a full habit of body requiring very different remedies from the pallid and delicate girl, whose slender and undeveloped form betokens want of strength and activity in her constitution. It is to be regretted that the author did not here enter more fully into the constitutional affections, which so frequently accompany these conditions—a subject, upon which the writings of Dr. M. Hall may be most advantageously consulted. Dysmenorrhœa he has divided into the neuralgic, the inflammatory, and the mechanical. With respect to the last mentioned species, he states, that "though there can be little doubt, that dysmenorrhœa may result from this cause, I am far from thinking it so common, as was supposed by Dr. Macintosh, neither do I believe that even where it exists, it is always the cause of the

difficulty and pain. In the case I saw, although we cured the stricture, the dysmenorrhœa continues to this day." We agree so far in the opinion here expressed, as to believe, that Macintosh very much overrated the frequency of stricture of the neck of the uterus, as a cause of painful menstruation; but at the same time we must admit, cases are frequently presenting themselves, whose history would in our estimation point to this condition, as the source of the malady. Thus when we see a girl suffering pain every month, not so much before the process has commenced, but rather when it is evident the secretion is already established; when the uterus at this time enlarges in volume, so as to be felt even above the pubis, of which some instances have occurred to us; when the pain persists throughout the whole period, and is not assuaged by the appearance of the discharge; and when no membranous exudation points to a morbid state of the lining membrane, we would very much incline to believe such a state of parts to exist. And the perfect recovery, which in such cases follows a fruitful marriage, still further strengthens our opinion. We are not unaware, that with this form the others may be combined, as was, most probably, the fact in the patient Dr. Churchill alludes to, in whom mechanical dilatation failed to effect a cure; but such cases, we conceive, exhibit rather the characters of the other species of the disorder, such as an inflammatory condition of the system during the paroxysm, a discharge of membrane, or acute agony, preceding by some hours any attempt at menstruation. Those latter instances will require far different treatment, and until the morbid action is subdued, will rather be injured than benefited by the use of the bougie. The complications must first, if possible, be removed, and then, if symptoms of impediment still continue, local means may be adopted for facilitating the escape of the secretion. We would only further add, that in the membranous form, we have seen benefit result from mercury carried to slight salivation, where all other remedies had failed.

The chapter on Generation is carefully compiled. The difficult subject of conception, and the changes which occur in the Graafian vesicle, and subsequently in the ovum itself, are divested of much of the obscurity which hung over them, by the short, but lucid way, in which they have been discussed: and this part of the work has been rendered still more complete, by a notice of the diseased conditions of the fœtus and its appendages,—a subject of great interest to the pathologist. Simpson's views with respect to the effects of inflammation of the placenta, many of which our own observation has corroborated, are succinctly detailed; as are also the opinions of physiologists, particularly

those recently promulgated by Reid, as to the connexion subsisting between mother and offspring during intra-uterine life. Dr. Churchill very correctly states, that the situation of the placenta may be ascertained by the use of the stethoscope before delivery, and the examination of the secundines afterwards; but he has overlooked a table constructed on this principle with great accuracy and care, by Dr. Doherty, and published in the Dublin Medical Journal. According to it, out of 100 cases in 25 the placenta was implanted on the anterior wall, in 54 on the posterior, in 8 it adhered to the right side of the uterus, in 10 to the left, and in 3 only was the fundus its seat. Subsequently the same author pointed out, in the London Medical Gazette, an error into which Naegelè had fallen, in his calculations on this subject,—calculations, which Dr. Churchill adopts,—from not being aware, that when the placental souffle was heard over the abdomen, the placenta was always attached to the anterior wall; a fact, which is demonstrated by the situation of the perforation in the membranes, in such cases.

The development of the embryo, and the marks which point out its different periods, together with the characteristics of the maturity and perfection of the child, are sufficiently detailed. We perceive the author has adopted as a solution of the laws of development in the fœtus, that of the unity of organization, as it has been termed, or transitive development. In accordance with it, he considers the progressive phases of the embryo to correspond to the abiding forms, which are preserved in the total organism of animated nature. But while we acknowledge the beauty and apparent correctness of this theory, as especially applicable to the explanation of what have been looked on as monstrosities, it is but just to call attention, in connexion with this subject, to a learned paper, published by Scouler in the 18th volume of this Journal. In combating this theory, the Professor admits, it would be unfair to infer, that it is meant that the embryo commences its existence as a zoophyte, is successively a worm, a mollusc, an insect, and afterwards a fish, a reptile, and a bird; but he considers it in the obvious signification, that each organ, during its progress to maturity, runs through a variety of changes of structure, and the analogues of those fleeting forms are to be found in the permanent conditions of similar organs in the different classes of the animal kingdom. His arguments are principally founded on the facts, that the different systems in the embryo, as for instance, the vascular and nervous organization, do not pass through corresponding gradations, or in other words, do not advance *pari passu;* that many organs, as for instance the teeth, do not observe any particular law of development in

the animal kingdom, being frequently more defective in higher classes, than in those lower down in the scale ; that points of dissimilarity may be discovered between the vascular system of the embryo, and that of those creatures, (the zoophytes and crustacea for example) which at different epochs it is considered closely to resemble ; and that the evidences of parallelism of evolution in the nervous system are equally unsatisfactory, that of the embryo at no period coinciding exactly with the nervous development observable in the invertebrata, of which it is said to be at first the analogue. Nor do the different stages of evolution of the fœtal brain mark the degrees of endowment in inferior animals. For instance, in fishes, the cerebellum is well developed, while in frogs and reptiles it is comparatively imperfect. If then, he remarks, the parallel hold good, there ought to be, in the human embryo, a period when its cerebellum undergoes a temporary arrest of growth. From these, and many similar considerations, Dr. Scouler concludes, that the embryo of every animal has, from its earliest being, a determinate structure, peculiar to itself, which it preserves throughout its whole existence, only modified at different periods in such a way, as will suit the conditions under which the creature exists ; and that these temporary adaptations sufficiently explain the few analogies, which undoubtedly exist between the structure of certain organs in the fœtus, and in lower animals.

But to return to Dr. Churchill's midwifery. The chapters on the Signs and Duration of Pregnancy, Extra-uterine Conception, and Abortion, deserve a careful perusal. They are full of interesting and instructive matter.

The third part of this work is devoted to the Physiology of the Uterus, and the Process of Parturition. The following observation by which the author prefaces an account of the symptoms of labour, is we think worthy of being quoted :

> " Before I proceed, I should wish to impress upon my junior readers, the extreme importance of carefully and minutely studying the subject of natural labour, not merely in books, which must necessarily be imperfect, but at the bedside of the patient. *No case of labour, however simple, can be attended without some addition to our knowledge, if we are vigilant ;* almost all recent improvements in practice have arisen, and I believe all future ones will arise, from a more perfect knowledge of the natural process, and a more correct appreciation of the natural powers."

Of the truth of this remark we are perfectly convinced. The progress of every case, no matter how simple, presents to an observing attendant, some feature worthy of being remembered, some peculiarity, which it will be beneficial to bear in mind.

From the occurrence of those symptoms, which announce that the process of parturition has actually commenced, till the happy termination has been accomplished, no matter how short may be its duration, or how commonplace apparently its character, the practitioner can continually find subjects to interest him, and excite his admiration and reflection. The stethoscopic phenomena alone, would afford ample matter to keep his mind engaged; particularly if he take the trouble of noting the character and situation of the souffle, with a view to compare the evidence, thus afforded, of the position of the placenta, with that to be subsequently gained by an inspection of the afterbirth; and if he mark down in each case the average rapidity, and the locality of the fœtal heart, and the changes induced in both these sounds by the occurrence of the pains, and the progress of the labour. The results of such an inquiry, conducted on an extensive scale, are full of utility; and guided by the precepts laid down by Dr. Churchill, the student who thus devotes the time, he must spend at the bedside of even the most natural case, cannot but derive pleasure from testing the accuracy of the statements made by preceding observers. But there is still another subject upon which he may even more beneficially employ himself, namely, making himself familiar with the position of the fœtal head, as ascertained by tracing the direction of the sutures (the only true way of determining the point), and acquiring a knowledge of the alterations it undergoes during its progress through the pelvis. Even when the head presents in the first position, it will be a work of utility to observe the different planes through which it passes, before it is finally expelled, as upon an exact appreciation of those changes, will, in a great measure, depend his dexterity in the use of the forceps, when a case occurs to demand it. But more engaging still does the investigation become, when the head deviates from the usual mode of presenting, and offers itself to our examination in the third or fourth position. The beautiful mechanism then displayed, which must escape every one whose finger has not been trained to the requisite nicety of tact, is not less gratifying than surprising to observe. On this subject we cannot withold an expression of our admiration of the accuracy which Naegelè has displayed in his researches; upon the correctness of which, we have convinced ourselves, reliance may in almost every particular be placed. To him certainly is due the "credit of having fully demonstrated all that was true, and correcting that which was erroneous, in the few authors, who, before his time, had attempted to explain the mechanism of parturition;" but there is one point,

in which we think with Dr. Churchill, he has himself fallen into error, or at least his calculation does not accord with our own; we mean the relative frequency of the second and third positions. We are well aware mistakes will certainly result, if an examination be not made sufficiently early, before the third position has had an opportunity of changing into the second. Still our recollection leads us to believe the latter to occur, as the primary position, at least in this country, in a much larger proportion than once in 1290 cases, which is the estimate Naegelè has given. On the other hand, however, we cannot agree with Boivin, who assigns it a proportion of 19 per cent., much less with Lachapelle, who believes it to occur in 21 per cent.; we rather consider the ratio given by Halmagrand, of 5 in every hundred, as much nearer the truth.

Upon the subject of variations from ordinary convalescence after labour, we would willingly make a few remarks, did the space still remaining permit; but we must content ourselves with drawing attention to Dr. Churchill's judicious and practical comments, more particularly on the nervous shock, which labour induces, sometimes even to a fatal extent; and hurry on to notice the chapters on unnatural or abnormal labour. Here, we think, the author has put more prominently forward, than any preceding writer, a point of considerable importance, which he deserves commendation for so distinctly enunciating. It is a well known fact, even to the most ignorant, that in a labour which has endured to an unusual degree, symptoms of a dangerous character frequently become developed, and the lives of both mother and child are placed in jeopardy. While all treatises on midwifery agree in this particular, modern authors have united, and most beneficially so, in cautioning the practitioner to beware how he makes time his standard, or permits the mere prolongation of labour to induce him to resort to artificial assistance for its termination. It remained for Dr. Churchill, however, to draw particular attention to the fact, that the effects of a long-continued labour upon the constitution of the patient are influenced in an important degree by the stage in which the delay occurs. There cannot be the slightest doubt that in the generality of labours, which terminate favourably as regards both mother and child—in natural labours as they are termed, a certain ratio, or almost fixed proportion, is perceptible between the duration of the first and second parts of the process. This proportion may be stated as 3 or 2 to 1. But (to use the author's words):

"Very slight experience is sufficient to show that delay, in labour, may occur at either of these periods; and a more extended observation will prove, firstly, that when the delay is excessive, the relative

duration of the two stages is destroyed, so that they bear no steady proportion to each other; thus for instance in a labour of sixty hours, the first stage may occupy fifty-nine, and the second only one, and *vice versâ;* secondly, that the effects of a prolonged labour on the constitution of the patient, depends upon the stage in which the delay occurs; and thirdly, that delay in the first stage involves very little, if any danger, no matter how tedious it may be, but that a delay in the second stage, beyond a comparatively short time, is always of serious import."

To prove this last position is given a table from the registers of the Western Lying-in Hospital, more extended in its details than any on the same subject, we believe, on record. It is intended to exhibit the relative duration of each stage in labours of twenty-four hours and upwards, in which the delay occurred in the first stage, and the results to both mother and child. From the list, which embraces 143 cases, are excluded all presentations but the head, all operative cases, all cases which were prolonged in the second stage, and all cases, which, to the authors, Dr. Churchill and Mr. Speedy, presented features of doubtful accuracy. In this latter point, however, we cannot altogether agree; at the same time, that it is due to Dr. Churchill to express our conviction, that this and all other tables given (and they are many), were constructed with every desire to be accurate. But we conceive there is one element in this table, which throws over it a degree of uncertainty; namely, that "in most cases the patients were not brought under his care until the greater part of the time had elapsed." Now we know, in the first place, how prone the lower classes of society are to exaggerate their sufferings, and how much a woman will insist upon the length of time she has been in labour, when she wishes to induce us to afford her assistance; and secondly, no one is better aware than Dr. Churchill, how commonly false pains are confounded with the symptoms of true labour, and an estimate made accordingly. For these reasons, we conceive, that no reliance can be placed upon the accounts given by hospital patients or their friends, as to the time at which labour sets in; and when we hear of the first stage having continued for sixty, seventy, or eighty hours (in one case given it is said to have lasted 177 hours), it may fairly be concluded, that a great portion of that time elapsed, *before* parturition had in reality commenced, as characterized by uterine contraction, active dilatation of the os uteri, and distention and protrusion of the membranes towards it. Still, although we cannot regard this table, as indicating correctly the duration of the first stage in all the cases it includes, nor altogether coincide with Dr. Churchill in the opinion, that delay in the first stage involves very little if any danger, no matter how tedious

it may be* (to which painful, irritable labours, more especially those arising from an unyielding state of the os uteri, afford in our minds an exception); we think the table well calculated to fulfil the constructor's intention, and when compared with those instances, in which delay arose in the second stage, to point out how much less risk there is, in the former, than the latter class of cases. The distinction, we consider a very judicious one, as tending to discourage too early interference on the part of the practitioner, or an attempt to hurry on the labour, merely because pains have existed for a considerable time.

Labours which are thus delayed in the first stage are termed by Dr. Churchill "tedious" labours; while the denomination "powerless" is given to those in which the second stage is prolonged by causes, acting on the uterus primarily or secondarily, so as to render the pains feeble and inefficient, no mechanical impediment to the escape of the child existing. The effects on the constitution produced by arrest of the process of parturition at this period are well pourtrayed.

"I do not profess," observes the author, "to be able to explain why the series of alarming or fatal symptoms should result from delay in the second, rather than in the first stage of labour; it may be, that the first stage is a more local, the second a more constitutional process; that in the latter, the different systems of the body (vascular, nervous, muscular, &c.) are deeply involved, and that a return to their natural state, without the removal of that, which occasions their implication, is impossible; or we may say, if we prefer, with the Arabian writers, that it arises '*ex lege naturæ*' that the process must be fulfilled, or the lives of mother and child be sacrificed. Whatever form of expression we use, the fact remains the same; the symptoms which arise from delayed second stage differ from those in the first, and the case may terminate fatally if unaided."

In a subsequent part of the chapter care is taken that the student may not by these observations be led to suppose, that assistance must be afforded in every case, after a certain period; it is impressed on the mind of the reader, that the reason of our interference should not be the delay, but the urgency of the symptoms, so that if the labour should be prolonged, even in the second stage, and no ill consequences arise, we should not be justified in interfering further than to remove the cause.

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* It is but right to mention that Dr. Churchill has himself pointed out a very important exception to this rule in three cases, in which, after a prolonged first stage, the second stage is also tedious. In such cases it is evident that the fatigue or exhaustion caused by the first stage may seriously compromise the patient.

Where the progress of the labour is impeded by some mechanical obstacle, connected with the soft parts, which, by causing delay in the second stage, leads to the development of powerless labour, such cases are classed under the head of "obstructed" labour.

"The symptoms in the two last orders will be the same in similar constitutions, if the amount of delay be equal; but there is this difference from the commencement, that in obstructed labours, the uterine action is intact, nay, perhaps, more vigorous than usual, but ineffective in proportion to the magnitude of the obstacles. If they be not very great, the augmented force brought to bear upon them may be successful; if they be considerable, delivery may be impossible without assistance; and lastly, in some extreme cases, delivery '*per vias naturales*' may be impossible."

The author having detailed the treatment which such cases, and those in which the pelvis is defective, require, goes on to treat of minute or imperforate os uteri, carcinoma or scirrhus of the uterus, narrow and undilatable vagina, tumours in the pelvis, and herniæ, upon all which, as obstacles to delivery, Dr. Churchill's remarks are pertinent and useful.

We may, in this brief notice, pass over, almost without remark, the many chapters devoted to the consideration of obstetrical operations. Dr. Churchill's researches on this subject were already before the public, and had received the favourable reception due to the diligence and learning displayed in them. The labour expended in the useful, but tedious occupation of working out the statistical results of such operations, and the carefulness observed in rejecting, as far as possible, all doubtful statements, have conferred on the tables contained in this part of the work, a degree of accuracy, seldom attained, and without which the numerical mode of investigation is only calculated to mislead, and is worse than useless. The practical remarks, too, with which they are interspersed, betoken a cautious and observant physician. On the whole this treatise on midwifery, which also contains some well arranged observations on child-bed diseases, has, we repeat, afforded us a great deal of pleasure in its perusal. Its appearance will be hailed by the student, as a boon of considerable value, as it is calculated to shorten to him the path to knowledge, which will be permanently useful in its character, while by the brief notice it contains of the opinions of all distinguished writers, both native and foreign, it must create in him a desire to make himself more largely acquainted with the literature of his profession. To the practitioner, whose avocations leave him but little time

to study, this manual will be of no less service, as it lays before him, as it were at a glance, the most recent views, and the most modern improvements in his art. It is not at all our wish to draw invidious distinctions between it, and those treatises lately published by Ramsbotham and Rigby, both excellent in their way, and the productions of sound and distinguished obstetricians; but we would not do justice to the book before us, if we failed to remark, that it contains matter, which has not received a place in either of the former. Thus, Dr. Ramsbotham's work contains nothing of the physiology of menstruation, and next to nothing upon generation, and Dr. Rigby, who has discussed the latter subject, has omitted the former.

As a work of art Churchill's midwifery is distinguished for the admirable quality of the paper, the clearness of the type, its low price, and above all for the beautiful and numerous woodcuts, with which it is embellished. It is highly creditable to the publishers, and particularly to Mr. Bagg, by whom the engravings have been executed.

Clinical Lectures on Venereal Diseases. By Richard Carmichael, M. R. I. A., President of the Medical Association of Ireland, Corresponding Member of the Royal Academy of Medicine of France, &c., and consulting Surgeon of the Richmond, Hardwicke, and Whitworth Hospitals. Illustrated by Engravings of the different forms of Eruption. Reported by Samuel Gordon, A. M.

It has been well observed by an eminent writer, that "it is a duty incumbent upon the physician, who has ventured at any time to lay before the profession his ideas of disease and its treatment, to review from time to time his published opinions, that he may see how far subsequent experience has borne out, or modified, his former impressions; and if he detect any material alteration in his mode of viewing disease, more particularly as respects the practice he has found beneficial, it is right that he should take an opportunity to make it known."*

In the volume before us, which contains the substance of a course of lectures on syphilis, delivered at the Richmond Surgical Hospital, the author again discusses the doctrines which he published in 1814, and we consider it no weak argument in

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* Dr. Bright, Guy's Hosp. Rep., vol. i.

support of the correctness of his opinions, that after twenty-eight years' experience, and the most ample opportunity for observation, Mr. Carmichael still entertains, without any alteration, the views on this subject which he then advanced.

It has been the fashion with English writers to ascribe to the late Mr. Rose, the merit of having first introduced the non-mercurial treatment of syphilis, and in doing so they have shown that the writings of that gentleman could only have been known to them by hearsay, for had they perused his paper, read before the Medico-Chirurgical Society, June 24th, 1817, and published in the eighth volume of the Medico-Chirurgical Transactions, they would have observed that he frequently alludes to Mr. Carmichael's opinions, published in 1814.*

More than a quarter of a century has now elapsed, since the non-mercurial treatment of syphilis was first introduced in this city, and notwithstanding the prejudices which those who adopted this plan had to contend with, and the weight of authority which opposed it, we now find that in every country of Europe, and in America, the treatment of syphilis without mercury is the *rule*, with mercury is the *exception.* Even the most prejudiced mercurialists allow, that though "this medicine has been employed in the cure of syphilis, more universally than any other medicine, for ages past, *yet at this day it must be admitted, that many cases have resisted its use; and still further, that often where it did not cure, it considerably aggravated the sufferings of the patients.*"† We believe that this is nearly all the non-mercurialists contend for.

Those who feel interested in this subject are strongly recommended to peruse the valuable lectures of Professor Graves, published in the Medical Gazette for 1838-39, where they will find, that the opinions of German physicians of the greatest eminence are strongly in favour of the treatment of syphilis *without* mercury, and Mr. Carmichael has shown that in the large hospital of Vienna, *every* form of the disease is treated on the non-mercurial plan. In this, however, they go further than either Mr. Carmichael or Dr. Graves, who both agree in treating certain forms of the disease with that mineral.

However gratifying it must be to Mr. C., in a professional

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* We regret that we have so much reason to complain of the unfairness of English and Scotch writers, in not acknowledging the labours of our countrymen, or in ascribing their discoveries to friends at the other side of the channel. In a subsequent Number of this Journal we intend exposing these omissions, which, if they be not intentional, are only entitled to pardon, as the result of gross ignorance.

† Practical Observations on the Venereal Disease, and on the Use of Mercury, by Abraham Colles, M. D., p. 321.

point of view, to observe the almost universal adoption of his opinions throughout Europe; yet, we feel confident that the pleasure derivable from this source, falls far short of that which he experiences from the conviction, that his labours have lessened the mass of suffering with which so many of his fellow-creatures are afflicted. We are indebted to Mr. Carmichael, not only for the non-mercurial treatment of syphilis, but for the improvements that have been made in the treatment of the disease by *mercury*, for there can be no doubt, that the publication of his opinions has led to the safe, mild, and judicious administration of that medicine, by those who still place reliance in it, among whom be beg to include ourselves. We shall presently detail the particular cases in which Mr. C.'s faith in the efficacy of mercury remains unshaken. In the first lecture the author professes his belief in the plurality of venereal poisons, but allows that in a *practical* point of view it is of no importance whether we admit or deny the truth of this doctrine,

"Provided we make ourselves acquainted with the characters and dispositions of primary affections, and also with the *groupings* of constitutional symptoms, assigning to each that mode of treatment which experience has indicated to be the most judicious. Those other causes of the great differences which are found in both primary and secondary symptoms, are supposed to be some unknown state of the constitution. I say unknown, for I have seen the healthiest person afflicted with the worst description of primary phagedenic and sloughing ulcers, and have, on the contrary, seen the most unhealthy affected with the mildest form of primary ulceration. Mr. Mayo, in a late lecture on the venereal, rather than attribute the variety of symptoms we meet with to a plurality of poisons, 'conceives it to be owing to some difference, and probably one of a temporary nature, in the habits of the party affected:' but he affords no clue to ascertain what this difference is, which causes such marked distinctions. This grouping or congeries of particular symptoms, however, which characterizes the various forms of venereal, is as certain as that small-pox and measles have each their peculiar train of symptoms. Thus, when you see an eruption of papulæ, preceded by fever, which desquamates into scaly, copper-coloured blotches, you will meet with a chronic inflammation of the fauces—enlargement of the tonsils, which is often mistaken for ulceration (from their irregular surface and depositions of lymph), and also occasionally enlargement of the lymphatic glands of the neck—pains in all the larger joints, resembling those of rheumatism, are constantly present, but you neither meet with ulcers in the throat or nares, or nodes on the bones. Again—when you see an eruption of pustules, or spots of a pustular tendency, preceded by fever, and terminating in ulcers, each of which is covered with a thick crust, either assuming the conical shape of rupia prominens, or evincing a tendency to that form, and, when these crusts fall off, exposing deep ulcers which

spread with a phagedenic margin, you may expect to meet on the same individual ulceration of the throat, particularly on the posterior part of the pharynx, which, if not checked, will soon engage every part of the fauces as far as can be seen, extending upwards into the nares, and downwards into the larynx. Ulcers, both of the nares and larynx, however, not caused by the extension of the ulceration of the throat, but arising in distinct patches, may be also met with; which in the one, will soon be followed by caries and exfoliation of the bones of the nose, and, in the other, by a train of most distressing symptoms, owing to obstruction of respiration, and the irritation of a most sensible organ. Together with these symptoms, such a patient will probably complain of severe pains, not only in the large joints, particularly the knees, but in the shafts of the bones, followed by nodes of a most obstinate description.

"In another form of venereal, when you see a scaly eruption of a dark-red or copper colour, either presenting the characters of lepra or psoriasis, according to Willan and other systematic writers on cutaneous diseases, you may expect to meet with deep ulcers of the tonsils, and pains in the head and shafts of the long bones, followed by nodes. All the symptoms which attend this form are of a very chronic nature. The patient will betray by his looks that he is labouring under some constitutional malady; but the eruption is not ushered in by that active fever which precedes the other forms of eruption; and even the ulcers of the throat are so little acute that they make considerable progress before their presence is indicated to the patient by any pain or uneasiness.

"I would wish to put you on your guard, in discriminating eruptions, to distinguish accurately those which are *scaly from their commencement*, from those which become so in their progress, for both papular and pustular, as well as tubercular eruptions, become scaly as they decline.

"Inattention to this leading feature in the appearance of eruptions, has led many men, even of experience, to confound one form of venereal disease with another, and to deny that there are any essential or specific distinctions between them. There are, no doubt, many symptoms in common to every form of venereal disease—for instance, eruptions, some of which, as the papular and pustular, are preceded by well-marked fever; and the scaly, by one, however so trifling, as in general to escape notice; but want of rest, and a careworn, sickly countenance, in most instances, sufficiently betray disturbance of the constitution.

"Affections of the throat likewise, from simple inflammation to destructive ulceration, are common to all. Pain in the head and joints are also equally common, and I may say the same of iritis; but, although the last affection may occur in every form of venereal disease, it is much more frequent in that which produces the papular eruption than in any other. And I have observed, that, even in this form, it is most frequent in those patients who have imprudently allowed the

eruption to be repelled by exposure to cold, or removed it from the skin by the premature use of mercury, anticipating that safe period for its exhibition, when the eruption has desquamated, and is evidently on the decline. This is so frequently the case, that Mr. Travers, many years since, attributed iritis to mercury, and not to the morbid poison: but, at the period in which he promulgated this opinion, mercury was exhibited for every stage and form of venereal. Since that time, however, the anti-mercurial practice has afforded us opportunities of witnessing iritis in a great number of cases where not a grain of mercury had been taken. From these considerations, the question naturally arises—in what relation does the venereal stand to other diseases—does it, in its various forms, constitute a disease, *sui generis?* Or does it not, on the contrary, in every particular, evince that it belongs to the order, Exanthemata, of the class Pyrexia; which Cullen defines to be 'contagious diseases beginning with fever, and followed by eruption.'

"Now, in every point, the various forms of venereal answer fully to this definition. It is not a mere idle speculation to ascertain to what class any particular disease, whose nature we wish to investigate, belongs: for, although every individual disease has its own characteristic symptoms and laws, yet in a duly arranged class, there must, or ought to be, some characters and laws common to all.

"Now, the venereal, in all its varieties (even without the adoption of *my* peculiar views), is obedient to those laws common to the entire order of the exanthemata—it is contagious—it is ushered in by more or less fever—and it is followed by eruption. It is communicable by contact only, and not through the medium of the atmosphere, as was at one time generally believed; and, in this respect, it differs from the other morbid poisons of the same class. When inoculated, it produces, like small-pock or cow-pock, a vesicle, the lymph of which is highly contagious; but as the matter becomes, in its progress, purulent, it gradually loses its contagious property. This fact was well ascertained, several years since, by the experiments of Mr. Evans, an account of which is given at page 81 of the second edition of my work on Venereal Diseases; and, more recently, have been repeated, on an extended scale, by M. Ricord, with the same results.

"In this respect, it bears the closest analogy to both small-pock and cow-pock; for, in order to insure a successful inoculation, every practitioner knows the necessity of taking the infection while it is yet in the form of lymph. These facts we will find, by-and-by, of great importance in unravelling or in ascertaining the laws by which venereal diseases are governed. Some days may elapse before the poison of those vesicles is imbibed, so that a cauterization of the part, by an escharotic, affords a good chance of cutting off infection, and thus protecting the system from contamination.

"When the system *is* affected, eruption, attended with inflammation or ulceration of the throat, and preceded by fever, is the usual character of all the exanthemata, in which the various forms of vene-

real fully participate. These eruptions have their regular periods of accession after infection of continuance and decline. If any of them are driven prematurely from the surface some internal organs, as the brain, lungs, or intestinal canal, are sure to suffer; therefore, in the treatment of the exanthemata, the great object is to conduct them in such a manner as to allow the eruption to pursue its natural stages, and to prevent, at the same time, the ill effects of too much excitement either during the eruptive or secondary fever; and we shall find that those rules of treatment, hitherto only thought applicable to the eruptive stage of the acknowledged exanthemata, are equally consonant to the same stage of all venereal diseases. But every individual disease of the order has a particular modification of these general laws; for instance, when the eruption of small-pock, measles, or scarlatina, suddenly recedes from imprudent exposure to cold or other causes, the brain or lungs are most liable to become affected, and effusion upon these organs, under such circumstances, may terminate, rapidly, the patient's existence.

"The object of the practitioner, under such untoward circumstances, is, by stimulants and heat to the surface—either by the hot bath or warm air, to brink back the eruption to the skin, which affords the most likely means of averting the formidable train of symptoms consequent upon its sudden and premature disappearance.

"Now, the precise same law manifests itself in the government of every form of venereal disease, but modified in each form, or individual morbid poison. For instance, when the pustular, or tubercular, venereal eruptions are removed prematurely from the skin, and not allowed to develope themselves according to the respective laws of the morbid poison to which each appertains; instead of the brain or lungs* being, in consequence, assailed, the periosteum and bones, as well as other deep-seated parts, seem to suffer. When the papular venereal eruption suddenly disappears, the periosteum and bones are not consequently affected; but the patient will suffer from increased severity of the pains of his joints and head; and, frequently, iritis occurs, also attended with more or less of constitutional disturbance, which may be succeeded by a fresh crop of the eruption that usually brings with it considerable relief, but which will recur again and again if injudiciously treated. The more frequent causes of this premature removal of those eruptions from the surface, are either imprudent exposure to cold and moisture, or to the too early and injudicious use of mercury, before the eruption has indicated by its desquamation or scaliness, that it is naturally on the decline.

"We can easily comprehend why cold and wet, applied to the skin, should repel that action of its vessels necessary to the develop-

* From the observations of Dr. Byrne of the Lock Hospital, as quoted by Dr. Stokes in his work on the Chest, page 93, it appears that the lungs are frequently attacked with inflammation, as a consequence of a repressed venereal eruption, and that this affection is always relieved by restoring the cutaneous eruption,—a very strong argument in favour of the opinions advanced in the text.

ment of an eruption; but why mercury should produce a similar effect is not quite so obvious—that it does, however, possess this power, the experience of every practitioner proves; perhaps, this powerful mineral, by exciting a new action, suspends, on the Hunterian doctrine, that of the morbid poison, and thus the natural development of the eruption is interrupted. In support of this view of the laws by which venereal poisons are governed (and of which we could never acquire any adequate or certain knowledge as long as it was the practice to exhibit mercury for every form and stage of these diseases), I need only state the fact, now generally admitted, that in those cases treated without mercury, the secondary symptoms are particularly mild, and *the bones are seldom or never affected.*

"There is nothing more worthy of notice in pathology than the regularity which nature observes with respect to the characters and symptoms of morbid poisons—making allowance for difference of age, constitution, climate, and various external influential causes, the regularity with which the exanthemata pursue their usual course, in obedience, each to its peculiar laws, is truly surprising. Are we then justified in supposing that the venereal poison is an exception to this general rule, and that one poison alone produces the great variety of eruptions which you now see so truly and admirably delineated before you?

"[Here Mr. Carmichael pointed to numerous drawings of the various forms of venereal eruptions displayed on the walls of the lecture room].

"Are we to suppose that the same poison which produces this mild papular eruption, that ends in desquamation of the cuticle, and then disappears almost spontaneously, also occasions this eruption of pustules and tubercles terminating in ulcers, some of which you see covered by those thick conical crusts, termed rupia—while others, having cast off these coverings, exhibit deep and extensive foul surfaces spreading with a phagedenic margin? Here, again, is another form of eruption, totally unlike the two others; these drawings exhibit neither papulæ, pustules, tubercles, rupiæ, nor ulcers, with phagedenic margins; but scaly spots, some flat and small, and others raised, particularly at their margins, both of a dark-red or copper colour. These are faithful delineations of syphilitic psoriasis and lepra, and exhibit the same character of scaliness from their very commencement, by which they are distinguishable from papulæ in their declining or desquamating stage.

"The general belief is, that the same poison produces these different forms of eruption, which in mildness and virulence appear the very antipodes of each other. If they are both the product of the same virus, then we must believe that the venereal is an exception to all other morbid poisons, and must agree with those who consider it a disease *sui generis*, or totally unlike to any other. But when we look a little deeper into the subject, perhaps you will agree with me that it does not form an exception. Those who are of opinion that

there is but one venereal poision, which produces all the varieties we see both in primary as well as secondary symptoms, account for these varieties by assigning them to difference in constitution, or to that of the state of health of the patients at the time of receiving infection. Now, I am willing to admit that both primary and secondary symptoms may be greatly modified by age, constitution, mode of living, and treatment, both local and general; but I contend that none of these causes will produce the great difference which is obvious between this mild, papular form of venereal disease (from which the patient will certainly recover, except under the grossest mismanagement), and this virulent, destructive eruption of rupiæ, and extensive phagedenic ulceration of the skin, from which it is often doubtful if the patient will ever recover, even under the most judicious treatment. I might as well admit that difference in constitution would in one person, from the same poison, cause an eruption of measles or mild chicken-pock, and in another the worst form of confluent small-pock. But if these differences which venereal eruptions exhibit were owing to those causes assigned, we ought to see the phagedenic disease constantly assailing the broken down, drunken debauchee, and the mild form only attacking the young, healthy, and robust. This, however, is so little the case, that according to my experience both these classes of patients are indiscriminately liable to both these forms of disease.

"Another argument in favour of a plurality of venereal poisons is afforded in the fact, that different forms of the disease require different modes of treatment and management. For instance, the disease characterized by a papular eruption, does not require, either in its primary or secondary stages, mercury for its cure, a medicine which is positively injurious until the eruption is desquamating and on the decline. 2ndly. The phagedenic venereal disease, both in its primary and secondary stages, is positively injured, and rendered more intractable by the exhibition of mercury. When the disease is on the decline, as indicated by extensive scaly-looking blotches or tubercles on the skin, where formerly ulcers, covered with crusts of rupiæ existed, mercury may then, and *not till then*, be useful in alterative doses, to expedite the cure. But my chief reliance for the constitutional treatment of this disease is the hydriodate of potass, combined with sarsaparilla. 3rdly. That form of disease which is characterized by the scaly eruptions, psoriasis and lepra, yield with certainty and rapidity to the exhibition of mercury, a proposition which cannot be advanced respecting the other forms of venereal disease.

"A third argument in favour of a plurality of venereal poisons is afforded from historical facts. In the latter end of the fifteenth century it is generally supposed that the venereal disease first made its appearance in Europe, and, as is well known, was thought to be an importation from America, brought home by the Spaniards: a just retribution, it was alleged, for the evils they inflicted upon the natives of the New World. Whether or not this account be true, there is no

doubt but that a novel and destructive form of disease made its appearance about this period, first observed at Naples amongst the Spanish soldiery, from whence it spread rapidly all over Europe."

He next endeavours to show that gonorrhœa and venereal sores were common amongst the ancients :

"Thus, in the 15th chapter of Leviticus, we find the Hebrew lawgiver directing such precautionary measure as might prevent the extension of gonorrhœa throughout the camp, for such most probably was meant by the words, 'running from the reins.' Hippocrates speaks of ulceration and defluxions upon the private parts, with tubercles in the groin. Celsus also speaks of sores affecting the genital organs, and from his description it would appear that these were ordinary primary sores."

The ancients were not aware, however, of the connexion between the primary and secondary venereal affections, a circumstance we need not wonder at, when we recollect, that until very lately, both the eye and the testicle were considered as exempt from syphilitic contamination.

At page 19, Mr. C., explains his mode of classifying venereal *diseases:*

"My classification of venereal complaints is grounded on the character of the eruption, which affords a more certain basis for the classification than primary ulcers, as the latter are far more liable to be modified and altered by a great variety of circumstances, such as the manner of living of the patient, and mode of treatment adopted by the practitioner. Under these views I have divided them into the *papular, pustular, phagedenic*, and *scaly* venereal diseases.

"With respect to the *Papular disease*, I find its eruption produced either by an ulcer of peculiar characters, or by a gonorrhœa virulenta, internal or external. The ulcer commences in the form of a pimple or vesicle, containing a thin, ichorous matter, which gradually becomes thick and clouded ; a scab forms in the course of three or four days, which separating, displays an excavated ulcer, in which state it remains eight or ten days. Towards the end of the second week the surface becomes on a level with the surrounding skin, or perhaps raised a little above it, presenting a smooth, fungous-like appearance, but without induration, raised edges, or phagedenic margin. This ulcer, which is the venerola vulgaris of Mr. Evans, may, of course, be greatly changed from its natural appearance by the management or mismanagement of either the patient or his medical adviser.

"Gonorrhœa virulenta is also capable of causing a papular eruption, with its concomitants, inflammation and swelling of the fauces, and pains in the different joints ; as is also that external gonorrhœa, or patchy excoriation of the glands and prepuce, usually termed chancrous excoriation. I am of opinion that these three primary affec-

tions arise from the same poison, and produce the same train of constitutional symptoms as we every day meet with them on the same individual, who has acquired them by the same identical sexual contamination.

"I shall now notice, briefly, the primary symptoms of the *Pustular Venereal Disease.* It is an ulcer which begins like that of the papular form of venereal disease, as a pimple or vesicle, but does not exhibit its usual characteristic signs, as is the case with other primary venereal ulcers, *until the second or third week.* The characters which distinguish this ulcer from others is a smooth surface (rather inclined to the phagedenic than to the fungous appearance of the ulcer last described at the same period of duration), with well-defined elevated edges. It has been objected that I have mistaken this ulcer for that first described, during its excavated or early stage. But this is not the case, for the ulcer under consideration is in general very obstinate, and does not assume the appearance of excavation in consequence of its elevated edges, until the second or third week; whereas, the ulcer previously described is excavated at first, and becomes raised and fungous in the second week. I have assigned this, the *ulcer with elevated edges*, a place between the papular and the phagedenic disease, but it is in obstinacy, and in the severity of its constitutional symptoms, much more nearly allied to the latter than to the former.

"Mr. Key, in his excellent observations on primary syphilitic ulcers, inserted in the Guy Hospital Reports, for October, 1839, remarks, that 'if the lines of demarcation, between classes of sores, be not so clear and defined as Mr. Carmichael describes them, and one class runs *insensibly* into its neighbour, it follows that the poison producing them must possess but slight shades of distinction, and must, like the sores which they produce, closely resemble each other in the middle of the chain, while at the extreme points their difference must be considerable.'

"These observations of Mr. Key's perfectly apply not only to the ulcer I have been just endeavouring to describe, which insensibly tends to the phagedenic species, but to all the other symptoms, both primary and secondary, of venereal diseases; for, though I have afforded strong reasons in favour of the doctrine of a plurality of venereal poisons, yet I never meant to deny that there must necessarily be a great similarity between them, and that they form a chain, the links of which, though distinct, are closely connected.

"The pustular form of venereal disease is of far less frequent occurrence in practice than the papular. Its eruption is characterized by pustules of a phlyzacious character, intermingled with papulæ. The pustules end in superficial ulcers without phagedenic edges, and heal with great facility, while the papulæ desquamate. In the same form of disease apthous spreading ulcers may appear on any part of the fauces, and the patient is not only subject to pains of the joints, but to nodes on the bones. [Here are excellent delineations of this

eruption, which often extend over every part of the body, but particularly the trunk].

"The primary symptoms of the *Phagedenic venereal disease* is either an ulcer of a corroded appearance, with irregular jagged edges without induration, or one covered by a slough: when the slough separates, a phagedenic surface presents itself (not a healthy granulating surface like that which succeeds a slough caused by excessive inflammation); the ulcer still extending by phagedena, another slough may form, and thus, by an ulcerative and sloughing process, the most extensive destruction and mutilation will ensue, if not met by appropriate means. That, which I have just described, may, with propriety, be termed acute phagedena, in contradistinction to a chronic form of this ulcer, in which it proceeds slowly but surely in its destructive progress, spreading with an irregular phagedenic border in one place, while it is healing in another. The eruption, ulceration of the fauces, larynx, and nares, the pains of the joints, but, particularly, of the knees, and the obstinacy and frequent recurrence of nodes, correspond with the primary symptoms in severity and destructiveness. If mercury is employed in the early stages of either primary or secondary symptoms, *it often renders this malady actually incurable;* and numbers annually die, after lingering for years, who are thus injudiciously treated. But fortunately, though it is the most unmanageable form of venereal, we have means in our power, in the great majority of cases, to cure this disease, provided that mercury has not been prematurely exhibited.

"The primary ulcer of the *scaly venereal disease*, unlike that we have just been describing, is remarkably indolent in its nature; it progresses slowly, and occasions little or no uneasiness or pain. Its distinctive character is induration, compared by Hunter to firm cartilage under the skin; but the ulcer is not always excavated as he describes it. We often, on the contrary, meet with this firm induration under a superficial sore, more deserving the name of an excoriation than that of an ulcer. This, as well as all primary venereal ulcers, commences in the form of a pimple or vesicle, and does not assume its characteristic induration, as I before observed, until the second or even third week. I have seen many surgeons pronounce an ulcer to be a true Hunterian chancre, that had only the fulness around it, which the most simple sore would present when irritated by red precipitate, or any of those dressings usually applied to venereal sores. This is, however totally different from the induration, 'like a piece of cartilage under the skin terminating abruptly,' as described by Hunter of the primary ulcer we are considering. The constitutional symptoms of this disease partake of the indolence of the primary affections. The fever which ushers in the eruption is scarcely perceptible, and is only indicated by an appearance of ill health without other morbid symptoms. The eruption, either psoriasis or lepra (the latter now seldom met with), is equally chronic and slow in its progress: and the ulcers of the tonsils, though often deep and foul, excite so little un-

easiness, that their presence is as often first discovered by the surgeon as by the patient. Pains in the head and in the shafts of the long bones, with nodes, are frequent; but the joints are not so liable to be affected as in the other forms of venereal already detailed. It is thought that this form of disease was the most prevalent in Hunter's time, as his description is more applicable to it than to the other forms; but if this was the case, it certainly has, in a great measure, been superseded by the papular disease, for I might with safety say, that from thirty or even forty cases I meet with of the latter, I do not meet with one instance of the indurated chancre with its scaly eruption.

"Mr. Mayo, in a late lecture published in the *Medical Gazette*, says, that it is still quite common in London; but, perhaps, this highly respectable surgeon is not so particular as I am concerning the degree of induration which characterizes the Hunterian chancre, and also not so scrutinizing as I consider it my duty to be concerning the stages of an eruption, with the view of ascertaining whether it was scaly from the commencement, or only became so by the desquamation of papulæ or minute pustules."

At page 63, Mr. C. describes the ulcer which precedes the papular eruption, and also speaks of its treatment:

"I shall begin with the *papular form of venereal disease*, which comprises the great majority, perhaps nine-tenths of the cases which occur in this country. The primary symptoms are a mild form of ulcer, without induration or phagedena, and a gonorrhœa virulenta. Under the latter term, I not only include this disease, as it affects the urethra in both sexes, but the vagina in the one, and the glans penis, and interior surface of the prepuce in the other. The latter affection, in the male sex, is usually called spurious or external gonorrhœa, and incorrectly, chancrous excoriation. These several affections are frequently found in the same individual, and contracted by the same sexual connexion, from which circumstance alone, independently of the experiments of inoculation of M. Ricord, and the accurate observations and experiments of Mr. Evans, already noticed, we may safely infer, that the same virus is capable of producing both ulceration and gonorrhœa, although the patient may, at the time he comes under our observation, exhibit but one of these affections.

"The ulcer commences in the form of a pimple or vesicle, with some surrounding inflammation; the matter contained in the vesicle gradually becomes more clouded or opaque; ulceration then takes place, when the disease is, in general, for the first time, discovered by the patient, in consequence of the itching or stinging sensation occasioned by the ulcer. The duration of such a pimple or vesicle before ulceration, is more likely to be learned from experiments of inoculation, than from any information to be obtained from patients. According to Ricord, a period of six days will elapse from the time of infection to that of ulceration, during which time there is first a redness, then a pimple with a red areola, then a vesicle containing a liquid more or less turbid, which at length becomes purulent; a scab

then forms, on the separation of which, an ulcer is exposed. The ulcer is excavated, and secretes a thin ichorous matter during the first eight or ten days, which marks the period of infection; the matter then gradually becomes purulent, which marks the period of reparation, and the decline of the specific powers of the poison. It becomes afterwards daily less excavated, and at length its surface rises above that of the surrounding integument, presenting a smooth fungous appearance, without induration (by which it is distinguished from true chancre), or even fulness, except it has been irritated by the use of stimulating applications. Neither are there raised or elevated edges, by which it may be distinguished from the primary ulcer which occasions a pustular eruption; nor does it present a phagedenic or sloughing surface—so that, at the period when ulcers assume their specific characters, in the second week from commencement, it may be known *positively*, by its smooth, mild, fungous-looking surface, and *negatively*, by the absence of the characteristics of the other forms of primary venereal ulcers.

"If we wish to experimentalize with the virus of this form of disease, we should take the matter for inoculation while the ulcer is still in its excavated and progressive state, before the period of reparation, the discharge not having as yet become purulent. This is the period also in which we may have a good prospect of extinguishing the disease at once, by cauterizing the ulcer with nitrate of silver; with which view it will not be sufficient to touch the sore slightly with the escharotic—it ought to be applied effectually, and to the very bottom of the ulcer. The mode which I usually pursue for this purpose is to apply the powdered nitrate of silver to the ulcer on the end of a moistened probe. M. Ricord, it seems, felt always certain of stopping the progress of an ulcer, caused by inoculation, by cauterizing it, even at the fifth or sixth day after its commencement. A fact coming from such authority, thus authenticated, ought to assure us of the advantage likely to arise from the practice I have recommended.

"There was formerly a prejudice against the application of escharotics to primary ulcers, under the apprehension that they excited buboes; and I believe I was the first to oppose this foolish objection, by observing, in my work on the Venereal—"that the sooner an ulcer that secretes a morbid poison capable of infecting the constitution is healed, the more likely is the constitution to escape contamination." I also added—'that influenced by this consideration, when a patient applied to me with an ulcer in its first stage, while yet excavated and secreting lymph, I *instantly endeavoured to destroy its entire surface*, by a free application of lunar caustic;' and I observed—'that when the eschar separated, I had, in general, the satisfaction of finding a simple sore instead of a poisonous ulcer.' Although nothing can be stronger than the terms in which this practice was recommended by me, yet others thought proper to take credit to themselves, long after my publication, for advising the application in question. I constantly have recourse to it, as long as the ulcer is

excavated, and continues to secrete a thin ichorous, and therefore a poisonous matter. But when the discharge becomes purulent, and the surface of the ulcer is smooth, raised, and fungous, I prefer, above all other applications, a solution of the nitrate of silver, in the proportion of from one to three grains to an ounce of distilled water—under which application, with rest, moderate diet, and aperient medicines, to which I usually add small doses of tartrate of antimony, these ulcers are found to heal in a period of time scarcely to be credited by those who trust to mercury alone for their cure ; and, I shall venture to add, with a far less proportion of secondary symptoms than fall to the lot of the decided mercurialist to experience. I do not consider it necessary to exhibit mercury for these ulcers, because I find, from very ample experience, that it is not capable of preventing the accession of constitutional symptoms of this form of disease ; and certainly it would appear *inconsistent* to order a medicine that does not even expedite the healing of the sores in question, with the view of preventing those secondary symptoms, for which I would not exhibit it, were they even to occur."

There is no quality we value more highly in an author than *consistency*, and bearing in mind the doctrine just announced, we were not a little surprized to find Mr. C. speaking differently at page 115, where, after recommending antimonials, with sarsaparilla, in the acute stage of the papular eruption, and the latter medicine with hydriodate of potash when the fever had subsided, he says :

"When the spots have all desquamated, if they should continue to linger long, notwithstanding this treatment, you may give, *with advantage, small doses of mercury* in conjunction with sarsaparilla, in place of the hydriodate of potash. The preparation or formula I usually prefer, is that of Plummer's pill, or the compound calomel pill, of which four or five grains may be given twice or thrice a day. This course I pursue until the eruption has disappeared, the throat well, and the pains of the joints no longer felt, under confinement to the house in cold or wintry weather, but in summer or in warm weather, I am not in the habit of exacting strict confinement during the desquamating stage."

It strikes us, that this is a very judicious and safe plan of *mercurial* treatment, and an admission that even the mildest form of venereal eruption sometimes resists every kind of treatment, except that by mercury.

At page 121, Mr. C. describes the primary ulcer of the pustular form of the disease, he says it is characterized by its "*elevated edge and smooth face, without fungus or induration.*" The same treatment is applicable to both of these ulcers, and to the constitutional symptoms that follow them ; but as in the pa-

pular form, this also sometimes resists the non-mercurial treatment. At page 125 the author says:

"Should the nodes remain unaffected by that medicine (iodine with sarsaparilla), and the other means recommended, *then, and not until then*, would I recommend you to have recourse to mercury."

We next come to the phagedenic form of the disease, and regret that our space will allow us to speak only of the treatment; and here we shall quote our author:

"In my work on Venereal, I advocated a mild mode of treating the acute form of primary phagedenic ulcer, viz., by cataplasms, warm fomentations, decoction of poppy heads, and other soothing applications—while opium, conium, or hyoscyamus, were exhibited in sufficient doses to alleviate pain, and narcotize the system.

"This plan, though vastly superior to the mercurial (which was the prevailing one at the time, and usually led to the worst results), was too slow to meet the urgency and destructive progress of this ulcer. I, therefore, long since relinquished it for the following decisive practice. When a patient presents himself before me, with an acute phagedenic ulcer, I, with as little delay as possible, cauterize the entire of its surface with a strong mineral acid; it is immaterial whether we select the nitric or the sulphuric—either will answer.* This cauterization I perform by means of lint, rolled round a pencil of wood, dipped into the acid selected for the occasion. As the object is merely to destroy the surface, and as these powerful acids might be more destructive than necessary, I immediately direct an assistant to pour a continued stream of water on the ulcer, as soon as every part of it is cauterized. For this purpose I usually place the patient in an erect position, the penis held firmly over a vessel, which receives the ablution after the application of the acid. Lint, well moistened in water, is then wrapt round the penis, and a large anodyne is given to the patient, who usually awakes from its effects freed from the distressing pain which this ulcer in its spreading state occasions."—p. 130.

To Mr. Carmichael we are indebted for having introduced this very successful treatment of phagedena, though it appears that other writers have taken to themselves the credit of it.

We must pass over without any notice much valuable matter, and proceed to where the author speaks of what we, in common with all surgeons, must regard as one of the greatest improve-

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* Whilst acting as dresser in the venereal wards of the Richmond Hospital, we witnessed, and assisted in numerous experiments to determine the relative value of different escharotics in arresting the phagedenic sloughing in cases similar to those mentioned in the text. It was then ascertained that the pure nitric acid, was infinitely superior to all the other acids, but the pale muriate of antimony (carefully prepared) we found to arrest the sloughing process more quickly than any other escharotic.—Rev.

ments of modern surgery—an operation by which we have seen many lives saved, when nothing but the performance of it could have effected that object, viz., *Tracheotomy in extensive and spreading ulceration of the larynx.*

"I proposed tracheotomy as a remedy for ulceration of the larynx in the second edition of my work on Venereal, with the view of making an artificial opening through which the patient might breathe, and thus permit the larynx to remain in a state of quiescence, relieved from a constant current of air—advantages which conduce to the healing process in ulcers wheresoever situated. Not long after this proposition was made, I had an opportunity of trying it in a case deemed hopeless by practitioners of great experience. It succeeded, however, beyond my most sanguine expectations: and I have since practised frequently this operation with great success, accounts of which have been given in the third and fourth volumes of the *Transactions of the Association of the College of Physicians*, and in the second volume of the *Dublin Medical Journal.* But my friend, Professor Porter, has since performed tracheotomy not only in cases of venereal ulceration of the larynx, but in other chronic affections, with the most perfect success, an account of which he has given in a valuable work on the subject. Others have adopted the same measure with equal advantage, so that the utility of tracheotomy in such cases may now be esteemed as established. I have, however, often had occasion to regret to see it postponed until the lungs had become emphysematous, or, in other respects, incurably diseased. Such delays are calculated to bring a most beneficial measure into disrepute.—[Mr. C. here shewed numerous preparations, illustrating extensive ulceration of both pharynx and larynx; in some of these instances tracheotomy had been performed, and a portion of the rings of the trachea removed, as recommended by him, in order to leave an aperture sufficiently large for respiration, without a tube]. In this preparation, exemplifying extensive ulceration of the pharynx, the lingual artery gave way, and the patient died of hæmorrhage before assistance could be had to secure the vessel."—p. 142.

The next and last form is that known by the name of the "scaly venereal disease." This form follows the "Hunterian chancre," and is the only one in which Mr. C. gives mercury both for the primary and secondary affection. Though he has, for experiment's sake, cured two cases without that medicine, yet the time necessary for this is so great, as to prevent him ever having recourse to that plan again.

Though we have extracted largely from this volume there yet remain many things we would wish to lay before our readers, did space permit.

The work has been brought out in a very convenient and cheap form, and contains a large plate representing the different

forms of the venereal eruption. The drawings were taken from nature by Mr. Conolly, so well known for his accuracy of delineation in all subjects connected with pathology; their faithfulness must be instantly acknowledged by the surgeon whose eye is familiar with the appearances they are intended to represent.

These Lectures will, we have no doubt, be carefully perused by both practitioner and student; they contribute in an eminent degree to advance the high character which this city has long enjoyed as a school of surgery, and reflect the greatest credit upon the talents and industry of their distinguished author.

A Practical Treatise on Auscultation. By M. Barth and Henry Roger, M. D. Translated, with Notes, by Patrick Newbigging, M. D., F. R. C. S.

Within the last few years a great many works on auscultation have issued from the Parisian press, but to that before us we give a decided preference. It is written in a spirit free from all the ridiculous vanity that characterizes the labours of our French brethren, and possesses one feature which distinguishes it from all the others, viz. a disposition to acknowledge the investigations and discoveries of our countrymen.

In its pages we meet with the familiar names of Stokes, Forbes, Hope, Corrigan, Carlile, Carswell, &c., with whose writings Messrs. Barth and Roger appear to be very well acquainted.

To the student we earnestly recommend the purchase of this elegant treatise; it contains, besides the highly valuable and original observations of the authors, a good and correct analysis of all the latest information to be derived from the English, Continental, and American writers on the subject, and the notes appended by the Translator will be found extremely useful. Our space will permit of but one extract, which may be taken as a specimen of the style of the work.

Speaking of pericardial friction sound, they say:

"Its intensity is generally proportioned to the force and extent of the motions of the heart, but it presents various shades of character, and is of different shades of harshness. Hence authors have established several varieties, which have received distinct denominations, such as sound of *rustling*, of *crackling* (Bouillaud), of *new leather* (Collin), and of *rasping* (*raclement*) (Bouillaud).

"*Gentle friction* or *rustling* is very analogous 'to the sound produced by rubbing a piece of silk, for example, taffetas, or what is still better, fresh bank notes.' It resembles also the pleuritic friction

sound, peculiar to pleurisy with recently formed soft pseudo-membranes, with this difference, however, that friction of the pleura is more slowly produced, on account of the comparatively slower motions of the lungs.

" *Harsh friction*, or the sound of *crackling*, which conveys to the ear a sensation of rapidity, is very analogous to the sound of grating. The sound of *new leather*, which is a variety of pericardial friction, and is more uncommon than is generally believed, is sufficiently characterized by its very name ; it greatly resembles the sound produced by walking with shoes newly soled. Finally, the sound of *rasping* is a friction sound much harsher than the former, and ' seems to be caused by the rasping of a very hard and almost cartilaginous or osseous substance against the surface of the pericardium.'

" Pericardial friction bears generally an evident character of proximity ;* it seems to occur immediately under the ear. It is audible only over a limited space, or it may, on the other hand, occupy the whole extent of the præcordial region, and is then commonly more developed near the nipple. Being sometimes circumscribed, when it makes its appearance, it is afterwards propagated to all points of the thorax opposite the heart, (Hache, mem. sur la péricardite, Arch. gén. de méd. 1835, p. 14.) If well developed, it is generally permanent, that is to say, it accompanies every motion of the heart. At intervals it also loses in distinctness, and may even be absent altogether during some contractions of the ventricles. It varies, likewise, according to the posture of the patient, and, to judge from our own observations, it is sometimes more evident in expiration than in inspiration.

" If intensely harsh, it may be accompanied by *vibratory tremors*, discernible by applying the hand to the præcordial region, and is perceived over the same points, and over the same extent of surface. This phenomenon, described, for the first time by Dr. Stokes (Arch. de Med. T. IV. 1834), and already taken notice of in an essay read by one of us in the year 1833, before the *Société Médicale d'Observation*, bears the same relation to pericardial friction, as vibratory tremors (described p. 80, under the title of abnormal sounds of respiration) bear to pleuritic friction. According to M. Hache (*loco cit.*), it occurs more rarely than the latter phenomenon, in the proportion of 1 to 12. But, from the average of our own observations, we have deduced a very different proportion (4 to 10).

" The time intervening between the appearance and cessation of friction; in other words, its duration, is very variable. In one case, it is only from two to three days, in another, from one to two weeks, and extends very seldom beyond a month ; in another, again, it disappears for some days, returns and ceases afterwards entirely. At one time we

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* The reader will find a most important paper on the Diagnosis of Pericarditis, by Dr. Graves, in the May Number of this Journal, in which this peculiarity of pericardial friction is strongly insisted on.

have recognized it for two successive weeks, we then saw it return after four days' absence, and continue for nearly three weeks longer. We observe, moreover, that during its duration the sound does not preserve the same degree of intensity, nor the same characters. From being at first a sound of gentle rustling it is converted into crackling, and ends sometimes with regular rasping. In most cases, after having been rather harsh, it diminishes, from day to day, and gradually disappears.

" *Differential diagnosis.*—In some cases the friction-sound of the pericardium is very analogous to that of the pleura, but it is easily distinguished, by its occupying, exclusively and invariably, the præcordial region; and, above all, by its being synchronous with the motions of the heart, whereas pleuritic friction is synchronous with the motions of the respiratory organs.

" The circulation being generally accelerated when pericardial friction takes place, the ear perceives the sensation of a rapid sound, which circumstance adds to the difficulty of distinguishing the sounds proceeding from the interior of the heart. It is thus that gentle friction is sometimes very analogous to blowing, and harsh friction to grating; but the following are the characters, by means of which we may establish our diagnosis: Blowing occurs frequently at the insertion of the large vessels; friction, when limited, is generally observed lower down towards the apex of the heart. Blowing seems more deeply situated and stationary, friction is more superficial and peripheral; it may change its place, and is one day more distinct on the right, and another more developed on the left side. The one is commonly simple, and coincides always with one and the same third, the other is commonly double, and, in the case of being simple, it is not so strictly synchronous with the two sounds, to which it refers. Blowing is often propagated to the carotid arteries, but the sound of friction never. Finally, permanent blowing is subject to slight variations in intensity, and changes its character only after long intervals, whereas the transformations of the sound of friction are generally much more rapid. Add to this, that the sound of blowing and of friction may occur together, and that this coincidence manifests itself by the existence of characters peculiar to each of these abnormal sounds.

" *Physical cause.*—The physical conditions necessary for producing a sound of friction of the pericardium, as well as of the pleura, are the presence of rough surfaces, their actual contact, and the possibility of their gliding motion. The sound is then owing to the rubbing of these asperities over one another.

" Those conditions are fulfilled, when pseudo-membranes are deposited on one or both folds of the pericardium, or when ossifications, formed below the serous membrane (of which we have seen an example), present rugged elevations. It is, moreover, requisite, that the fluid contained in the pericardium be not so abundant as to separate the two folds, and prevent their contact, and that theadhesions be not so crowded as to impede the freedom of their movements. Under these conditions the contiguous surfaces glide over one another at the

moment of systole and diastole, whence results a friction sound, the intensity, characters, and extent of which, are proportional to the consistence and area of the pseudo-membranes, and to the energy of the motions of the heart.

" Pericardial friction is commonly more intense than pleuritic friction; but the contrary might sometimes be expected, because the pleura, which lines the walls of the thorax, offers more resistance than the parietal pericardium, and is consequently in a more suitable condition for producing friction ; but, on the other hand, the visceral fold of the pericardium, closely adapted to the organ of circulation, offers greater resistance than the pulmonary fold of the pleura ; add to this, that changes in the position of the heart are performed with more energy and rapidity than those of the lung. Let us also recollect, that the organ, in the act of striking the thorax, finds necessarily a point of support at the ribs, and that, in several cases, where the sound of friction is very intense, as in pericarditis complicated with hypertrophy of the heart, the pericardium applies itself close to the walls of the thorax.

" *Pathological signification.*—What we have said regarding the physical conditions necessary for the production of friction, indicates sufficiently that *this abnormal sound is connected with pericarditis*, but that it manifests itself only in certain phases of the disease, and all the material modifications, which may be superadded in the progress of inflammation of the pericardium, account readily for the variable intensity and characters of the sound, as well as for its coincidence with the first, third, or with the second, for its extent, persistence, departure, or return.

" Indeed the sound of friction may make its appearance in the commencement of pericarditis, when the inflammation has induced a pseudo-membranous exudation, and when the quantity of liquid is still inconsiderable. It decreases, when the enlarged hydro-pericardium renders the friction of the two surfaces less perfect; and ceases entirely, when the effusion becomes so abundant, as to prevent their contact by the distention of the membranous sac ; it reappears, however, at the resolution of the disease, when the liquid is reabsorbed ; and declines rapidly, when adhesions are quickly formed between the two folds, or it continues when the contrary takes place; again, it becomes harsher in tone the more compact and resisting the pseudo-membranes.

" The sound of friction may be absent, if the false membranes exist only at the posterior surface of the organ, and on the corresponding parietal fold. It is confined to a small space, if the albuminous exudation takes place from a circumscribed point of the anterior surface, or if the gliding motion be limited by adhesions or by too great accumulation of liquid. It is, on the contrary, spread over the whole præcordial region, if the false membranes be general, and in this case, its maximum intensity is commonly close to the nipple, where the heart rubs most vehemently against the pericardium, and where the wall of the thorax forms a point of support.

"The same explanation is applicable to the frequent and sometimes exclusive coincidence of the phenomenon with systole (when friction is most intense at the anterior surface of the heart), to the greater loudness of the sound during ventricular contraction, to its increased intensity, arising from augmented energy of the motions of the heart, which manifests itself when the patient leans forward, so as to bring the heart into more immediate contact with the walls of the thorax, as also during respiration, which assists in rendering this contact more complete. We now comprehend why the harshness of the sound bears, *cæteris paribus*, a direct proportion to the greater density and hardness of the pseudo-membranes.

"*Semeiological value.*—The sound of the pericardial friction is as sure a sign of pericarditis as pleuritic friction is of pleurisy. Its diagnostic value is comparatively even greater, on account of the inferior number and uncertainty of the signs, indicative of inflammation of the pericardium, whereas inflammation of the pleura reveals itself by numerous and easily appreciated phenomena.

"In short, *the sound of friction indicates the presence of pericarditis, with false membranes and with coincidence of a small quantity of liquid.*

"The sound of rustling indicates, according to M. Bouillaud, that 'the opposite dry and somewhat viscid folds of the pericardium (as happens at the commencement of pericarditis) are not yet covered with pseudo-membranes,' or that the pseudo-membranous exudation is recent, soft, thin, and scarcely presenting asperities. Harsh friction intimates, that these pseudo-membranes are more concrete, reticulated, uneven, and rough. The sound of the creak of new leather implies, in general, that they are more compact, resisting, elastic, and may have already been transformed into adhesions, which, during the motions of the heart, become subject to incessant, and more or less sudden and violent tugging (Bouillaud). Finally, the sound of rasping is connected with the formation of harder morbid productions, such as cartilaginous or osseous deposits in the pseudo-membranes, or those of an osseo-calcareous nature developed in the parietal pericardium, or also calcareous concretions lodged between the fibres of the heart, and protruding from under the serous membrane which lines them (Bouillaud)."

Dr. Hooper's Physician's Vade Mecum; or, a Manual of the Principles and Practice of Physic; new Edition, considerably enlarged and improved, with an Outline of General Pathology and Therapeutics. By William Augustus Guy, M. B., Cantab. Professor of Forensic Medicine, King's College, London; and Physician to the King's College Hospital, London.

This Vade Mecum has ever since its first appearance been a favourite with the student. The present edition is greatly enlarged, and now contains 493 pages, printed in the same type as Wilson's Anatomists' Vade Mecum, Churchill's Midwifery, &c. Dr. Guy has added many original articles, and has so altered and improved the others, that the work may now be considered a very excellent epitome of the present state of medicine, from the perusal of which both student and practitioner will derive great satisfaction and knowledge.

SCIENTIFIC INTELLIGENCE.

Medical Report of the North Dublin Union. By Doctors CORRIGAN and E. KENNEDY.

TO THE POOR LAW COMMISSIONERS.

Merrion-square, Dublin, 12th January, 1842.

GENTLEMEN,—In compliance with your request of December 20th, that we should visit the North Dublin Union Workhouse, "for the purpose of examining into the accommodation provided therein for the pauper children under two years of age, and into their general condition and treatment," we beg to say that we have made our inspection, and we submit to you the following Report:—We may premise it by observing, that the workhouse is well situated, being in the extreme north-western boundary of the city, the ground on which it stands possessing an elevation of ten feet eight inches above the level of Stephen's-green, and being only two feet two inches below the level of Mountjoy-square.

[Here follows an account of the dimensions of different wards, complaints against the officers, and suggestions for the guidance of the Commissioners, &c., which, as it does not contain anything of interest for the medical reader, we shall take the liberty of omitting, and proceed at once to the valuable portion of the Report, which treats of the morbility and mortality of the children.]

Children.—The children up to two years of age are not separated from their mothers. We first examined the 28 children in the day-room. They were generally pale, with a soft, flaccid state of the limbs, and the majority attenuated. A few, however, were comparatively more thriving, and more particularly two out of the five shown to us as having been born in the workhouse (one of seven, the other eight months old). Five of the children had slight enlargement of the glands of the neck, the majority had been ailing and in hospital once or twice since their admission. Of the 23 who came into the workhouse, the mothers stated that 15 were in good health on their admission, that the other eight were labouring under disease, and two of them stated that their children had improved since admission. Of 42 children in the workhouse under two years of age on our visit, 14 were in hospital, six labouring under affections of the chest, some of them phthisical; two had diarrhœa, and two had hooping cough; one

was suffering under disease of the brain; one had slight ophthalmia, one tabes mesenterica, and one had a slight febrile attack.

The hospital arrangements for the children are defective. The children labouring under contagious diseases are not separated from other children who may happen to be in hospital at the same time; some cases illustrative of the inconvenience resulting from this came under our observation. This is a defect requiring to be remedied. Should severe epidemics make their appearance, it will be difficult to prevent them from spreading through adults as well as children. The immediate insulation of a contagious disease, on its appearance among infants, is peculiarly necessary, from the greater mortality occurring in the early periods of life.

Morbility and Mortality of the Children under two Years of Age.—We found it impossible to arrive at satisfactory conclusions as to the actual amount of sickness that had occurred in the house; the want of separate wards for the children, and the difficulties necessarily attendant on the opening and formation of so large an establishment, together with the hospital books returning frequently the names of both nurse and child, where only one of them was under treatment, prevented our getting precise information on the amount of morbility that actually occurred among the children. We give, however, the following Hospital Report furnished to us, for twelve months, commencing May, 1840, the only period for which we could obtain a return:

Hooping cough,	16	Herpes,	1
,, Complicated with pneumonia,	6	Teething,	3
Consumption,	3	Scrofula,	1
Pneumonia and consumption,	2	Small-pox,	3
Pemphigus,	1	Chicken-pock,	3
Do. and consumption,	1	Ophthalmia,	10
Convulsions,	1	Hydrocephalus,	6
Small-pox,	1	,, With consumption,	2
Bronchitis,	11	Remittent fever,	4
Pneumonia,	6	Marasmus,	2
,, Complicated with consumption,	1	Abscess,	1
Diarrhœa,	3	Convulsions,	5
Consumption,	8	Febricula,	1
Measles,	1	Worms,	1
,, with convulsions,	1	Diarrhœa,	8
Scarlatina,	9	Cholic,	3
Itch,	1	Diseases not specified,	30
Pemphigus gangrenosus,	1		157

The Tables of Mortality have, however, been accurately kept, and the following is the Report handed to us:

Total admissions from opening of house, 11th May, 1840, to 1st January, 1842, . . .	275
Discharged, ...	129
Died, ...	98
Remaining in the house, ...	48

Which makes the proportion of those admitted, that died in the workhouse, $35\frac{2}{3}$ per cent.

It is difficult to form a perfectly accurate estimate whether this mortality is above or below the mean mortality of children under exactly similar circumstances; for, with the exception of the Report of the South Dublin Union Workhouse, we are not in possession of returns from any similar institution, where a constantly changing population under two years of age, the duration of residence varying from one day up to nineteen months, forms an element of the question; and the difficulty is still further increased, by the workhouse reports not furnishing a statement of the health of the children on admission. To afford all the means in our power of coming to a conclusion on the amount of mortality in the North Dublin Union Workhouse, we subjoin the following data and calculations, derived from various sources, of the mortality of children under two years of age.

By the Report of the South Dublin Union Workhouse, from its opening in April, 1840, to the present January, 1842, it appears that there were

Admitted, ...	208
Discharged	86
Died	74
Remaining in the house, ...	48

Which gives a mortality of $35\frac{1}{2}$ per cent. on the admissions.

The Registrar-General's Reports for England have not yet extended over a sufficient period to enable us to draw any accurate conclusion from them.

The last census for Ireland is not sufficiently advanced to afford us the necessary information. The Commissioners have, however, handed to us the only returns made out, viz., from Drogheda and Tullamore, giving the ratio of deaths in relation, not to the births, but to the existing population, under two years of age, for an average of five years; their return gives a mortality,

In Drogheda of 26 per cent
In Tullamore of 28 per cent.

M'Culloch, in his Mortality Tables, gives the following as the mortality of infant life in the cities of London, Vienna, and Berlin. Of 1000 children born at the same period in those cities there will be alive at the end of two years in

London, 548, Vienna, 471, Berlin, 528,

giving 48 per cent. as the mortality of children under two years of age in those three great cities.

With the view of ascertaining as nearly as possible the rate of mortality among the children under two years of age in the poorest classes of our own country, we questioned the married women of the Workhouse, as to the total number of their children, and the proportion that died under two years of age, before their admission into the Workhouse; we had the same inquiries made of the women who happened to be in the Lying-in Hospital, and of the women in the Mendicity. Our examination included from 200 to 300 women. Of 1000 children born, 340 died within two years, being a mortality of 34 per cent. In Sweden the mortality of children under two years of age, *including all classes of society*, is $25\frac{1}{2}$ per cent.; in France $32\frac{1}{4}$ per cent. The mortality of children varies much in the different classes of society, being far greater among the poor than the rich, the want of food and the necessary comforts having a serious effect in destroying infant life. The mortality of the children sent from the Foundling Hospital of Vienna to be nursed in the surrounding country has been found to fluctuate according to the plenty or scarcity of the current season. In Paris the mortality among the children of the arrondissements inhabited by the poorer classes is at the lowest calculation twice the mortality occurring in the arrondissements inhabited by the wealthier classes. The same has been observed throughout France; in the poorer departments one-fourth of the children die within the first year, in the richer departments only the same number die within five years.

But the mortality still increases in deserted children, who with their other deprivations suffer the loss of the mother's care. The reports of the Foundling Hospital of Dublin are before us for 34 years (its improved period), including from 1798 to 1831. Of 51,527 children received into the house there died in the interval before being sent to nurse 12,153, being a ratio of 23 per cent., 700 were returned to their parents, and of the remaining 38,674 sent to nurse in the country, there died under two years of age 15,252, being a mortality of $39\frac{1}{2}$ per cent. on the children sent to nurse, the average annual mortality on the total number for the period of 34 years, being 53 8-10ths per cent.

The records of foreign Foundling Hospitals, with very few exceptions, exhibit a much higher rate of mortality than even this.

The police commissioners have placed in our hands the returns of deserted children found by the police in the city of Dublin from the establishment of the force in 1838, to the present time. In three of the divisions the average time which the children remained in charge of the police being four days, is too short to permit us to draw any conclusion from their tables, and as the returns of the fourth division do not specify the time the children remained in their charge, we are also precluded from using them. The table of D division gives us, however, very full information.

The number of deserted children found in this division from January, 1838, to January, 1842, amounted to 75, who varied in age

from one day to 21 months, with the exception of one child aged $2\frac{3}{4}$ years; of the whole number 34 were reported healthy. The children were, on an average, about 5 months supported at nurse out of the police fund. Of the 75, 42 are dead, being a mortality of 56 per cent.

We have applied to all the parishes of Dublin for returns of the deserted children, the number received and sent to nurse, number that died each year, &c. In some of the parishes the books are either so badly kept as to be useless, or there are no books at all. The reply sent us, in one instance, was, that "the overseers do not keep either a record of their proceedings, or a registry of the children under their care. They *trust to memory* for the number and names of the children placed at nurse, &c." Similar answers have been received from others. The following are the parochial returns, we have succeeded in obtaining, of the mortality of deserted children under two years of age:

St. Catherine's Parish.

Year.	Found.	Died.
1832,	4	–
1833,	2	–
1834,	4	–
1835,	1	–
1836,	2	–
1837,	1	1
1838,	2	2
1839,	2	1
1840,	6	3
1841,	6	3
	30	10

Mortality, 33 per Cent.

St. Peter's Parish.

Year.	Found.	Died.
1831,	5	–
1832,	16	4
1833,	9	9
1834,	32	8
1835,	25	14
1836,	20	17
1837,	23	13
1838,	19	13
1839,	17	8
1840,	20	8
1841,	20	9
	207	103

Mortality, $49\frac{1}{2}$ per Cent.

St. George's.

Year.	Found.	Died.
1836,	8	4
1837,	8	5
1838,	1	2
1839,	2	2
1840,	7	8
1841,	3	1
	29	22

Mortality, $75\frac{1}{4}$ per Cent.

St. Mark's.

Year.	Found.	Died.
1836,	14	6
1837,	2	1
1838,	5	3
1839,	10	6
1840,	5	3
1841,	3	1
	39	20

Mortality, $51\frac{1}{2}$ per Cent.

St. Mary's.

Year.	Found.	Died.
1834,	22	12
1835,	18	14
1836,	19	14
1837,	23	6
1838,	21	8
1839,	30	13
1840,	7	8
1841,	8	8
	148	83

Mortality, 56¼ per Cent.

St. Michael's.

Year.	Found.	Died.
1836, to 1841	5	3
	5	3

Mortality, 60 per Cent.

St. Michan's.

No Assessment.

Deserted Children given in charge to a woman in Hammond-lane, until got into Workhouse, three out of four died in her charge.

Mortality, 75 per Cent.

St. Nicholas Within.

	Found.	Died.
Since 1834,	4	3

Mortality, 75 per Cent.

Ventilation.—We consider the modes of ventilation at present in use in all the rooms appropriated to the children defective.

To render ventilation efficient, there should be, 1st, abundant space; 2nd, the air should be ever changing; and 3rd, the room should be as free as possible from draughts. To secure the first we have recommended the exclusive appropriation of the large wards, No. 48 as a dormitory, and 43 as a day-room. Although convinced of the advantages derivable from the number of occupants being strictly apportioned to the size of the chamber, yet as a favourable opportunity existed of testing the accuracy of the principle, we visited the Hibernian School in the Phœnix Park, and obtained its medical statistics for several years from Doctor Elkington.

These returns give for the years 1828, 1829, and 1830, the proportion of 262 per cent. as having passed through hospital, when the number of pupils amounted to 600, its full complement, while only 187 per cent. passed through hospital in the years 1832, 1833, and 1834, when the number of inmates, by a reduction of the Establishment, was diminished to about one-half.

The decrease in deaths of the infants of the Dublin Lying-in Hospital from 1 in 6 to 1 in 20, that followed the diminution of the number of occupants in the wards, and introduction of improved ventilation, effected by the late Doctor Joseph Clarke, confirm the advantages of ventilation and the necessity of not permitting the number of occupants in the infants' room of the workhouse to exceed that at present accommodated. But no matter how large the chamber, or what number of cubic feet of air each person is allowed, unless its *continual change* be provided for, the air must become vitiated and injurious to health. Arrangements must therefore be made for

securing a constant change or circulation of air, where so mny individuals occupy the same chamber.

The ventilation at present is dependent on windows, doors, and chimnies, but as Dr. Birckbeck has very properly observed, "doors are for passages, windows are for light, and there should be apertures for ventilation." The windows constitute an excellent means of ventilation when the occupants are out of the wards, and should then all be kept open; but the worst means when the occupants are within the wards, as in the latter case it is impossible to prevent the inmates shutting them, and if left open, particularly unprotected as they generally are by any contrivance calculated to direct the currents from those within, it is doubtful whether they do not produce a greater degree of mischief than of good. The supply of so vital a necessary to human life as air, should be so provided for as to render it impossible that it could be interrupted by any accidental interference, whilst its introduction should be so regulated as to guard against converting one of the prime necessaries of life into an active cause of disease.

Pending the institution of a more comprehensive system of ventilation, we would recommend provision to be made for securing the supply and escape of 360 feet of air per minute, in each of the infant wards. The arrangements for effecting this should be independent of windows and doors, which may thus be kept closed, when the rooms are occupied.

The simplest and safest expedient for effecting this object will be the leading up several funnels or air-tubes from different parts of the ceiling in each ward, to communicate with the external atmosphere, either by opening into the space between the upper ceiling and the roof, from which the impure air can be discharged through louvred windows, or these tubes may open directly through the roof itself, terminating with a cap, to prevent down-draughts. This object will be further accomplished, and the portion of air next the ceiling, which is usually the most impure, will be drawn into the tubes in horizontal currents, by placing at a few inches from the mouth of the air-tube within the room, a circular disc, spreading some distance beyond the aperture. Having provided for the exit of the vitiated air, some modification of the following plan should be adopted, in order to afford an equal supply of pure air. Several openings may be made through the sides of the wards, at different points, on a level with the floor, over which perforated zinc plates should be secured, to regulate the admission of the air; the amount of air to be admitted through them being equivalent to that which escapes.

We would recommend the zinc plates to be perforated with holes of not more than one-eighth of an inch in diameter, and about one inch asunder. The air passing through will then enter the room in streams so fine and so far asunder from one another, that it will almost immediately, by its intimate mixture with the internal air, acquire a mean temperature.

Each ventilator may be a cast metal funnel let into the wall, slightly curved to prevent the lodgment of rain, with the wider or inner end one foot square, covered with the zinc plate perforated as described, and the outer or smaller end diminishing to an opening of two inches square.

Food for Infants.—Each nurse receives for the daily use of her child $\frac{3}{4}$lb. of bread, and $\frac{1}{2}$ a pint of milk, both of excellent quality.

We are of opinion that for *very young infants* a less solid food than bread and milk would answer better, such as barley or groat gruel, carefully made and fresh, with a greater or less proportion of milk according to their ages. Under the most favourable circumstances, the practice of mothers continuing children at their breasts after the first year is questionable, but under the circumstances in which mothers in a workhouse are generally placed, we look upon the practice as highly injurious, and one on which the prejudices of the parent, however strong, should yield. We doubt not therefore that taking the children from their mothers' breast at a year old at farthest, and at a more early period where a necessity is indicated, would tend considerably towards securing good constitutional health in children at this period.

As a further means of effecting this object and preventing the occurrence of disease, an extra allowance of milk, animal soups, or at a more advanced age, even a small quantity of animal food should be allowed to those children who are not thriving, although not fit subjects for hospital.

Clothing.—Each infant is provided with a calico shift, a flannel waistcoat, a linsey petticoat, and a check calico frock, and shoes; some of them also had socks and calico pinafores. The material of which the clothes are made is excellent, but the arms and chest are too much exposed; it would be conducive to the children's health to have sleeves added to their present dresses, and to have them altered in conformity with those of the children from 2 to 5 years of age at present in the workhouse. The clothing of the children generally is in a more cleanly state than is usual with children in similar walks of life in their own homes; but still not as cleanly in many particulars as it might be. No provision exists for guarding the infant from cold on going up and down stairs from one part to another of the building, or even on going into the yards; but we were informed that when the nurses and children were occasionally brought out to the garden they have lately been allowed to wear their blankets for this purpose.

The nurses ought each to be furnished, in addition to their present dress, with about two yards of wide drugget or baize, which they can wrap round their children and themselves on their being exposed to changes of temperature: a precaution quite as necessary to preserve the health of the nursing mother as the infant, and one which will deprive her of the only excuse she at present has for not being in the open air as much as her own and her child's health require.

Ablution.—The prejudice of the mothers against the use of the

bath for their infants was such that we were informed they had rebelled *en masse* against its employment; in fact, we found but one out of the thirty who gave her child the advantage of this adjunct to health—most of the others rested satisfied with washing the face, some the limbs, and a few the hands and arms of their infants, but not one of them washed the whole body. The health of the child depends so much on the proper performance of the functions of the skin, which can only be secured in infancy by the daily use of the bath, that this prejudice should be immediately overcome, and a regular and safe system of ablution introduced and persisted in; these observations would apply with equal justice to mothers and children.

The superintendent immediately in charge of the nursery and responsible to the matron, is one of the paupers themselves; she possesses no influence to enforce attention to the rules. There is a want of a fitting person to be placed over the nursery department, whose superior station and decision would give her sufficient weight and influence to introduce better habits in the nursery in this as well as in other particulars.

Exercise in the open Air.—There does not seem to be sufficient strictness in enforcing the rules upon this subject, yet upon their observance depends very much of the health of both nurse and child. We were informed that in this matter the nurses were most intractable, many of them remaining with their children confined to the wards for weeks, despite the repeated solicitations of those placed in charge of them. Exercise in the open air, however, is so vitally essential to parent and infant that it should not be left optional. In fact there should be an established order, for the day-rooms to be vacated, and if necessary locked for several hours in each day throughout the summer, and for at least two hours every day, the weather at all permitting it, in winter. The garden, as being more open to fresh air and light, is much better adapted as a place for exercise than the courts. In summer, benches ought to be placed in it. In winter it is safer not to have seats, as the more the nurses move about whilst in the open air the better, but a shed should be erected in the garden to afford them shelter when required; and in order to correct their indolent and sedentary life some light occupation ought to be imposed on them.

We have the honour to remain, Gentlemen,
Your obedient Servants,

EVORY KENNEDY, M.D.E., & T.C.D.,
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